SPECIAL EQUIPMENT COMMERCIAL SERVICE MANUAL - A005

N.S.N: 4110-01-450-0060

FREEZER, UNDER COUNTER
BLOOD PLASMA

110/220 VOLT
50/60 HZ. A.C.

THE JEWETT REFRIGERATOR CO. INC.
750 GRANT STREET
BUFFALO, NEW YORK 14213-1000

CONTRACT NO. SPO200-98-C-8500

DATA ITEM # DPSC-A

MODEL NO. CTF1-1B-06

1998

PRF161

SPECIAL EQUIPMENT COMMERCIAL OPERATION & SERVICE MANUAL

GENERAL INFORMATION

Each Jewett Freezer is a complete packaged unit ready to operate when connected to electric power lines. It is not necessary to have a refrigeration serviceman place the unit in service. Each freezer has been given a 48-hour test prior to shipment. Read all the instructions first before proceeding with the installation.

This plasma freezer has been designed and engineered in keeping with recommended standard temperature requirements established by the American Association of Blood Banks, the American National Red Cross and 510(k) clearance criteria for blood component storage.

This plasma freezer features a temperature/power monitor which insures safe, continuous monitoring of the upper solution temperature. Stainless steel, removable, adjustable drawers with full extension ball bearing slides provide easy access.

- ☑ Digital display of upper solution temperature in Celsius.
- ☑ Monitor indicator lights display safe and high temperature of stored contents.
- ☑ Circulation cooling fan.
- ☑ Temperature monitor audible signal with timer re-set switch.
- ☑ Recording thermometer - electronic, 7 day chart.

This plasma freezer is equipped with the following items:

EQUIPMENT PROVIDED

1. DTPM3000 Digital Temperature Power Monitor
2. 8ER Electronic Recording Thermometer
3. Dual Voltage/Cycle Transformer

See sections on MONITOR and RECORDING THERMOMETER for information on these items.

INSTALLATION INSTRUCTIONS

1. Measure all doorways and passageways for clearance before moving cabinet. This model will pass through a standard 30" door opening.

2. Move the freezer into the desired location, making sure the bottom of the freezer is evenly supported. If the cabinet sets on an uneven surface, a slight rocking or vibration might result when the condensing unit is set in operation.

3. Inspect the interior and exterior of the freezer, including the mechanical equipment for special instruction tags fastened at various points.

4. Make certain that the cabinet is located so that the grill panel of the mechanical compartment is unobstructed to allow for proper ventilation for the condensing unit.

5. An automatic condensate evaporator eliminates the necessity for a floor drain. For proper elimination of condensation, wafers should be placed in the condensate tray located in the rear of the mechanical compartment in accordance with the instructions packed with the wafers

6. The 1/3 H.P. hermetic sealed condensing unit is shipped with all service valves open and ready for operation. Do not adjust valves. The unit is designed to operate on 110 volt, 50/60 cycle, or 220 volt, 50/60 cycle, alternating current. Use of any other electrical characteristics may cause permanent damage to the electrical components.

7. Operate the cabinet for several hours to allow the unit to reach normal operation temperature before storing product. Erratic operation on initial start up does not indicate a faulty control. When normal operating temperature is reached, the condensing unit will cycle regularly.

INSTALLATION INSTRUCTIONS (CONTINUED)

8. **For 115 VAC 60 cycle 1 phase operation:**
Provide (3) 3 wire grounding type convenience outlets within 6 feet of freezer. Connect the cord with plug tagged 115 VAC 60 cycle 1 phase into the wall outlet. Connect the Model DTPM3000-1B Temperature Monitor and Model 8ER-1B Recording Thermometer to the other 2 wall outlets.

For 208/240 VAC 50/60 cycle 1 phase operation:
Provide (1) 3 wire grounding type convenience outlet within 6 feet of freezer. Before connecting the cord to the wall, select the appropriate connection inside the transformer.

Primary Volts			Secondary Volts	
Tap Connection	***50 Hz.***	***60 Hz.***	***50 Hz.***	***60 Hz.***
High	230 -250	253 - 283	105	115
Medium	210 - 239	230 - 260		
Low	189 - 217	208 - 236		

Connect the cord with plug tagged 208/240 VAC 50/60 cycle 1 phase into the outlet. Connect the cord with plug tagged 115/60/1 into one of the outlets located on the back of the freezer. Connect the Model DTPM3000-1B Temperature Monitor and Model 8ER-1B Recording Thermometer into the other available outlets.

Be sure the electric line is the proper size to carry the load. Low voltage due to line loss or line overload will cause the compressor overload to cut out. Excessive cycling could cause overheating and damage the motor windings.

Caution: Do not open cover of transformer when connected to power source - ***HAZARDOUS VOLTAGES INSIDE.***

9. All controls have been checked and adjusted at the factory. After the cabinet has been set in operation, allow the freezer several hours to cool the cabinets interior and insulation as well as the product load. Apparent erratic operation on initial start up does not necessarily indicate that the mechanism is faulty. After the mechanism has been allowed to bring the freezer down to normal operating temperature, the unit will cycle regularly.

10. Every effort has been made to use standard parts throughout the freezer. Therefore, most parts of the refrigerating system can be obtained at any refrigeration supply dealer and can be repaired, serviced or repaced by any competent service company.

OPERATING INSTRUCTIONS

1. Caution: Make sure transformer is set up for proper electrical voltage and frequency before plugging in unit.

2. Freezer is designed to operate at 110/220 Volt - 50/60 cycle - 1 phase power. Operation at any other power may cause permanent damage to the mechanism. See label at top mounted transformer for instructions on adjustments to suit available voltage and frequency.

3. Jewett Plasma Freezers are factory preset to operate at -30° C.

4. Manual defrosting of the freezer cabinet is not required, as the unit cooler defrosts automatically in response to the temperature control/defrost timer.

5. The unit cooler fan motor inside of the freezer runs continuously, except when the door is opened or the freezer is in a defrost cycle.

6. Clean the fan coil of the condensing unit periodically. Also clean the interior cabinet and drawers often, using warm water and a good fungicidal detergent.

7. To turn off the freezer, unplug it from power source.

For operation of MONITOR and RECORDING THERMOMETER see applicable sections.

THEORY OF OPERATION

THE BASIC REFRIGERATION CYCLE

Mechanical refrigeration is accomplished by continuously circulating, evaporating and condensing a fixed supply of refrigerant in a closed system. Evaporation occurs at a low temperature and low presure while condensation occurs at a high temperature and pressure. Thus, it is possible to transfer heat from an area of low temperature (i.e. freezer cabinet) to an area of high temperature (i.e. lab room).

Beginning the cycle at the evaporator inlet (A) the low pressure liquid expands, absorbs heat, and evaporates, changing to a low pressure gas at the evaporator outlet (B).

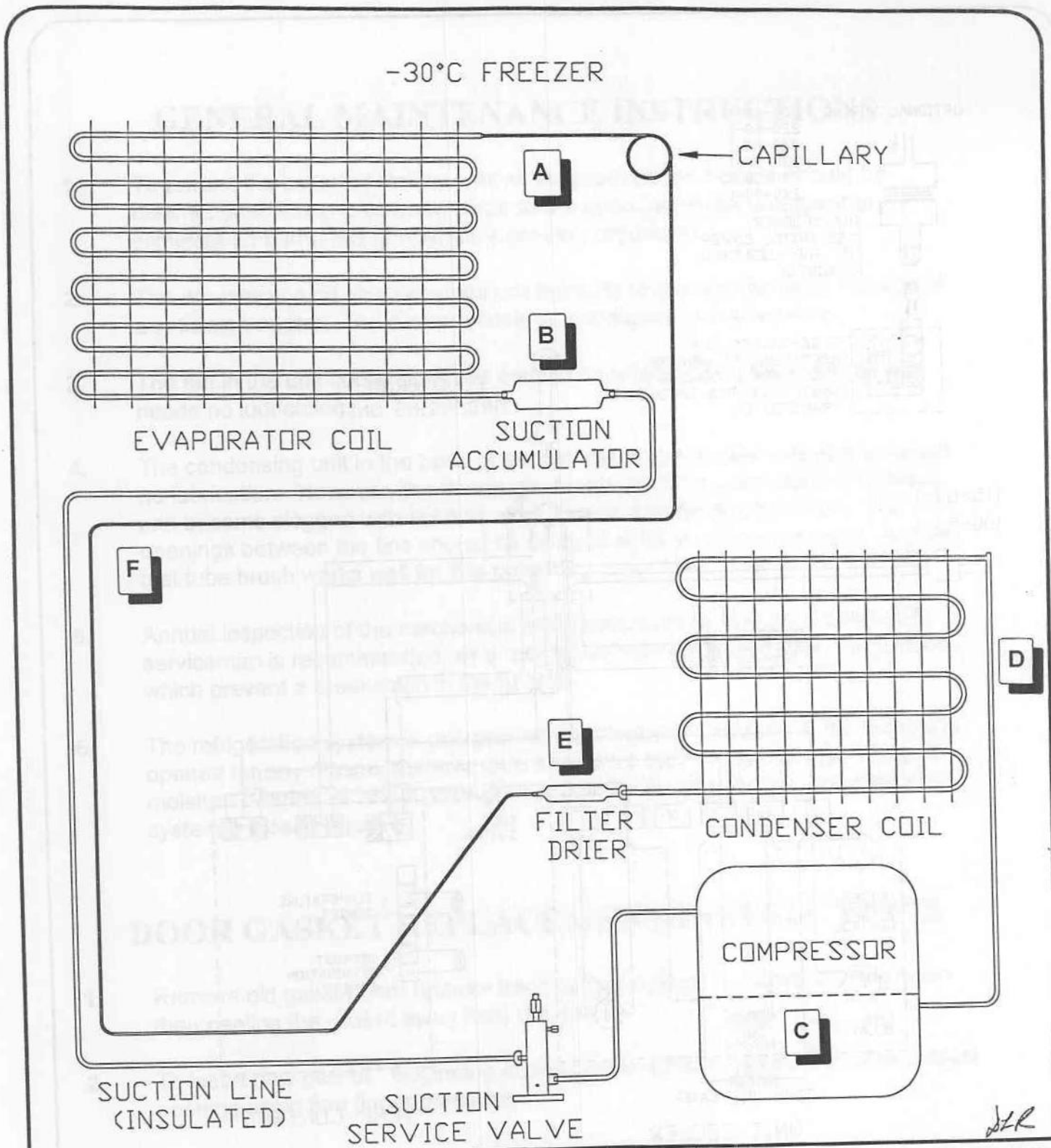
The compressor (C) pumps this gas from the evaporator, increases its pressure, and discharges the high pressure gas to the condensor (D). In condensor (D) heat is removed from the gas which then condenses and becomes a high pressure liquid.

As the high pressure liquid refrigerant enters the evaporator (A) it is subjected to a much lower pressure due to the suction of the compressor and the pressure drop across the capillary/drier assembly (E). Thus, the refrigerant tends to expand and evaporate. In order to evaporate, the liquid must absorb heat from the air passing over the evaporator.

Eventually, the desired air temperature is reached and the temperature control (F) will break the electrical circuit to the compressor motor and stop the compressor.

As the temperature of the air through the evaporator rises, the temperature control remakes the electrical circuit. The compressor starts, and the cycle continues.

See diagram PRF161-7



REV. NO.	DATE	REVISION
1	3/19/96	CHANGED -35°C TO -30°C EJH

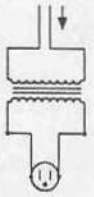
JEWETT

REFRIGERATION DIAGRAM

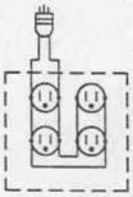
DRAWN BY	DATE	CHECKED BY	DRAWING NO.
ZELASKO	11/24/92	DLR 12-2-92	A300402

PRF161-7

OPTIONAL WIRING 208-60-1
220-60-1
230-60-1
220-50-1
230-50-1
240-50-1



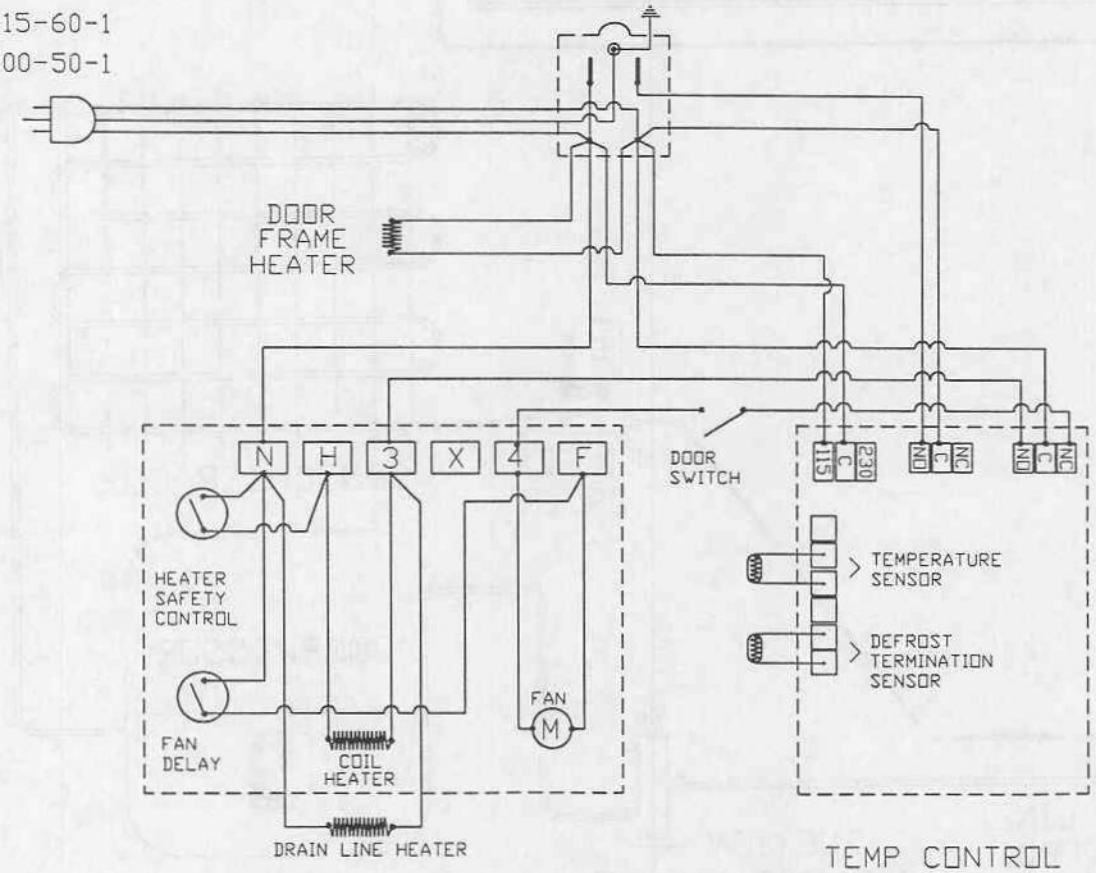
TRANSFORMER
(SEE INSIDE COVER
FOR TAP LOCATIONS
REQUIRED)



RECEPTACLES FOR
REFRIGERATOR, MONITOR
AND CHART RECORDER
WHEN OPERATED THROUGH
TRANSFORMER

PLUG FROM
CONDENSING UNIT

115-60-1
100-50-1



UNIT COOLER

TEMP CONTROL

TEMPERATURE CONTROL/DEFROST TIMER SETTINGS

TEMPERATURE, -28.0°C TO -32.0°C
DEFROST TERMINATION TEMPERATURE 7.5°C
DEFROST TERMINATION TIME BETWEEN 20 TO 24 MINUTES
J2 JUMPER TO "N" FOR ELECTRIC DEFROST
DEFROST DIP SWITCHES TO 3 TIMES PER DAY EVERY 8 HOURS

PRF161-8

JEWETT

WIRING DIAGRAM
CTF1-1B-06

DRAWN BY	DATE	CHECKED BY	DRAWING NO.	
ZELASKO	12/16/97	12-16-97	A300216	01

GENERAL MAINTENANCE INSTRUCTIONS

1. To protect the cabinet finish as well as the product, the freezer should be cleaned often using luke warm water and a good fungicidal detergent to eliminate air borne low temperature growing organisms.

2. The drawers should also be wiped occasionally to prevent the accumulation of any foreign matter. The drawer slides do not require any lubrication.

3. The fan in the unit cooler operates continuously when the door is closed and needs no lubrication.

4. The condensing unit in the base of the cabinet is completely sealed and needs no lubrication. However, the finned condensing unit through which air passes can become clogged with lint and other foreign substances in the air. The openings between the fins should be cleaned of lint every few months. A small test tube brush works well for this purpose.

5. Annual inspection of the mechanical refrigeration equipment by a competent serviceman is recommended, as a mechanic can frequently make adjustments which prevent a breakdown in the future.

6. The refrigeration system is charged with a refrigerant (R404a). If the system is opened for any reason, extreme care should be taken to prevent the entry of moisture bearing air and a good drier should be installed in the lines when the system is closed again.

DOOR GASKET REPLACEMENT INSTRUCTIONS

1. Remove old gasket from retainer track by first pulling on corner of gasket and then peeling the gasket away from the door.

2. To insert new gasket: Beginning at any corner, roll gasket leg into retainer track opening using firm finger pressure.

MAINTENANCE PROCEDURE SCHEDULE

		Annually	Bi-Annually	Quarterly	As Required
	Door Gasket				
Door	❑ Clean with Detergent	X			
	❑ Check Seal	X			
	Hinge & Latch				
	❑ Tighten Loose Screws	X			
	❑ Check for Wear	X			
	Condenser				
Compressor Compartment	❑ Vacuum as Necessary		X		
	❑ Vibration & Noise		X		
	Wiring				
	❑ Loose Wires		X		
	Interior				
Cabinet	❑ Clean with Detergent	X			
	❑ Loose Wires, Brackets, etc.	X			
	❑ Clean Drawers	X			
	Exterior				
	❑ Clean with Detergent	X			
	❑ Level on Floor	X			
	Monitor				
Temperature Monitor & Recorder	❑ Alarm Activation Accuracy			X	
	❑ LED Lamps			X	
	❑ Back Up Battery	X			
	Recorder				
	❑ Temperature Accuracy			X	
	❑ Pen Ink Cartridge				X
	❑ Back Up Battery	X			

STORAGE INSTRUCTIONS

If these freezers are to be stored, they must be kept in a controlled environment. Indoor storage is required with the temperature kept within a range of -20° F. to +120° F. (-29° C. to +49° C.)

Extended storage time may have an affect on the battery located in the temperature power monitor, as batteries have a limited shelf life. This unit uses a 9 volt battery. When the battery fails to hold a charge, it must be replaced with a fresh battery available at any retail store.

The only other component that may be affected by extended storage would be the disposable pen located in the recording thermometer. After prolonged storage or extended use, the pen may dry out and require replacement. Additional pens are available directly from Jewett (part number RDR024).

REPLACEMENT PARTS LIST

MODEL: CTF1-1B-06 BLOOD PLASMA FREEZER

Item #	New Part Number	Old Part Number	Description
1	CND261	M4YL-0035-IAA-140	"Copeland" Condensing Unit 115/60/1 R404
2	RSK2086	AS13CIE-IAA	Motor Compressor
3	RSK6033	050-C012-02	Fan Motor
4	FNB030	083-0122-00	Fan Blade
5	RSK4055	071-C100-38	Overload
6	RSK5065	040-C411-83	Start Relay
7	RSK1050	014-0038-04	Start Capacitor
8	COL009	TL09AF	"Bohn" Unit Cooler 115/60/1
9	MTR029	25300701	Fan Motor
10	FNB001	5101-B	Fan Blade
11	FNB015	5054-D	Fan Guard
12	HTR016	72102001	Electric Defrost Heater Element
13	CTL009	5708-L	Heater Safety Control
14	CTL046	20640L15-137-D56	Fan Delay Thermostat
15	DIR007	031252-018	"Little Giant" Filter Drier
16	ACM001	050503-02	"Parker" Accumulator
17	HTR107	H-25	Drain Line Heater
18	CTL040	SP-32DT-X182	Temperature Control/Defrost Timer
19	EVP001	1800	Condensate Evaporator
20	EVP002	1800-W	Wafers Only for EVP001
21	HTR012	SR1680-84.5	"Heaters Inc." Heater Cable
22	SWT014	780-021	"Littlefuse" Door Fan Switch-Normally Open
23	FSK022	R35-1105-XC	"Component" Fastener & Strike with Lock
24	HGS005	R42-2842	"Component" Hinge 1 1/8" Offset
25	GKT055	SN-39	"Tri-Comp" Magnetic Door Gasket
26	B200555H01	B200555H01	8 oz. Plastic Bottle Bracket
27	BTL001	BTL001	8 oz. Plastic Bottle
28	D201036H02	D201036H02	Kickplate Grill
29	TFR002	T60814	"Acme" Transformer

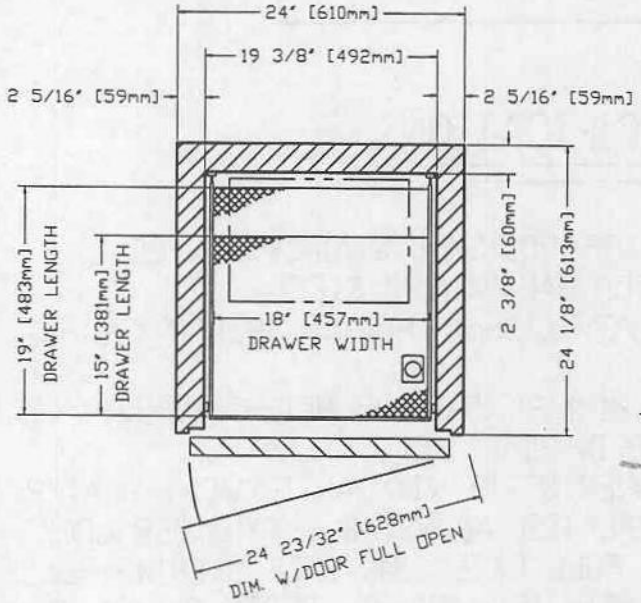
MODEL CTF1-1B-06

BLOOD PLASMA STORAGE FREEZER

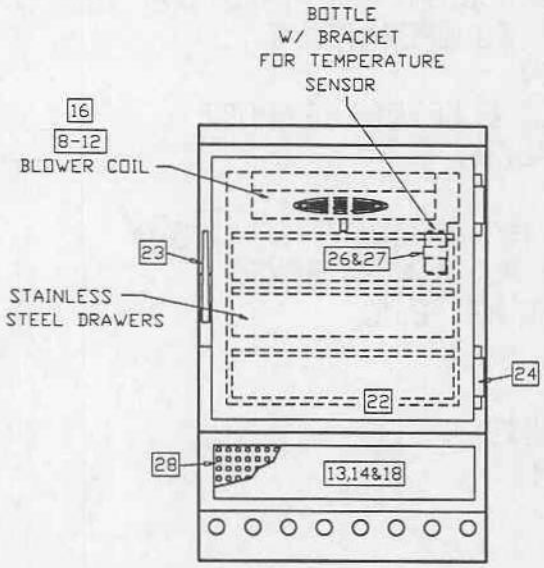
NSM 4110-01-450-0060

-30°C

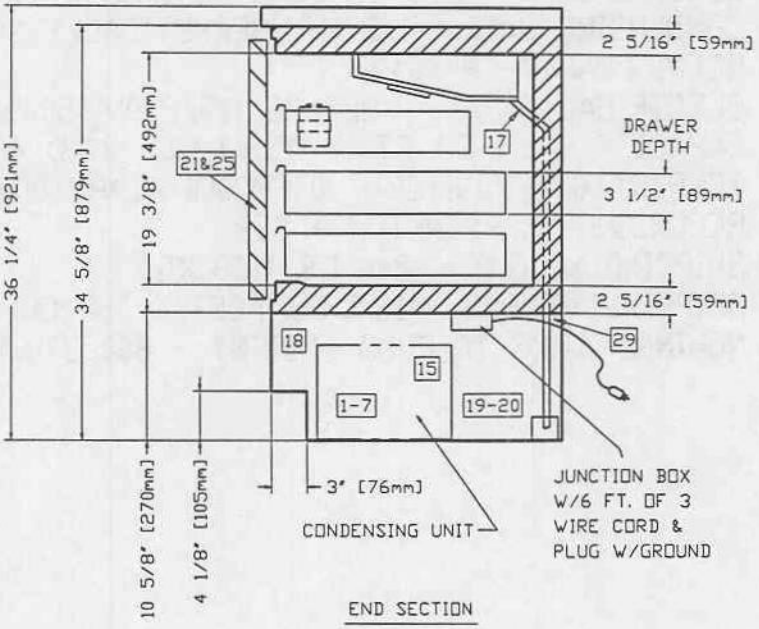
(-22°F)



PLAN SECTION



FRONT ELEVATION



END SECTION

5/97

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SCALE 1" = 16"

JEWETT

THE JEWETT REFRIGERATOR CO., INC.
750 GRANT STREET
BUFFALO, NEW YORK 14213-1098
TEL. 1-800-879-7767
TEL. 716-881-0030 FAX 716-881-6092

MODEL CTF1-1B-06

GENERAL SPECIFICATIONS

EXTERIOR - FRONT, SIDES, REMOVABLE TOP: POLISHED STAINLESS STEEL
BACK, BOTTOM, & CABINET TOP GALVANIZED STEEL
WIDTH 24" (610mm) DEPTH 24 1/8" (613mm) HEIGHT 36 1/4" (921mm)
INTERIOR - STAINLESS STEEL
WIDTH 19 3/8" (492mm) DEPTH 21 1/2" (546mm) HEIGHT 19 3/8" (492mm)
INSULATION - 2" POLYURETHANE FOAMED-IN-PLACE (CFC FREE)
GASKET - MAGNETIC & POLYVINYL BREAKER STRIP WITH ANTI-SWEAT HEATER
HARDWARE - EDGEMOUNT TYPE, CHROME PLATED, ADJUSTABLE, CYLINDER LOCK
DRAWERS - (3) STAINLESS STEEL WITH FULL EXTENSION BALL BEARING ROLLERS
(2) WIDTH 18" (457mm) LENGTH 19" (483mm) DEPTH 3 1/2" (89mm)
(1) WIDTH 18" (457mm) LENGTH 15" (381mm) DEPTH 3 1/2" (89mm)
TEMP CONTROL - SOLID STATE ELECTRONIC SET TO OPERATE AT
-30° TO -35°C (-22° TO -31°F)
COOLING UNIT - BLOWER COIL, AUTOMATIC TIMER ELECTRIC DEFROST
CONDENSING UNIT - 1/3 H.P. HERMETICALLY SEALED
REFRIGERANT - R-404A
ELECTRICAL DATA - VOLTAGE 115/230V, 50/60 HZ, AMPERAGE 6.7 (115V)
CAPACITY - 5.4 CU. FT. (153 LTR.) (88) 400 ML. PLASMA BOXES
TEMPERATURE MONITOR - DTPM3000 ALARM POINT AT -20°C
RECORDING THERMOMETER - 8ER
SHIPPING WEIGHT - 240 LB. (109 KG.)
SHIPPING VOLUME - 18.3 CU. FEET, .52 CU. METERS
NOMINAL BTU'S TO ROOM AMBIENT - 600 BTU/HR

NOTE: DESIGN OR SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

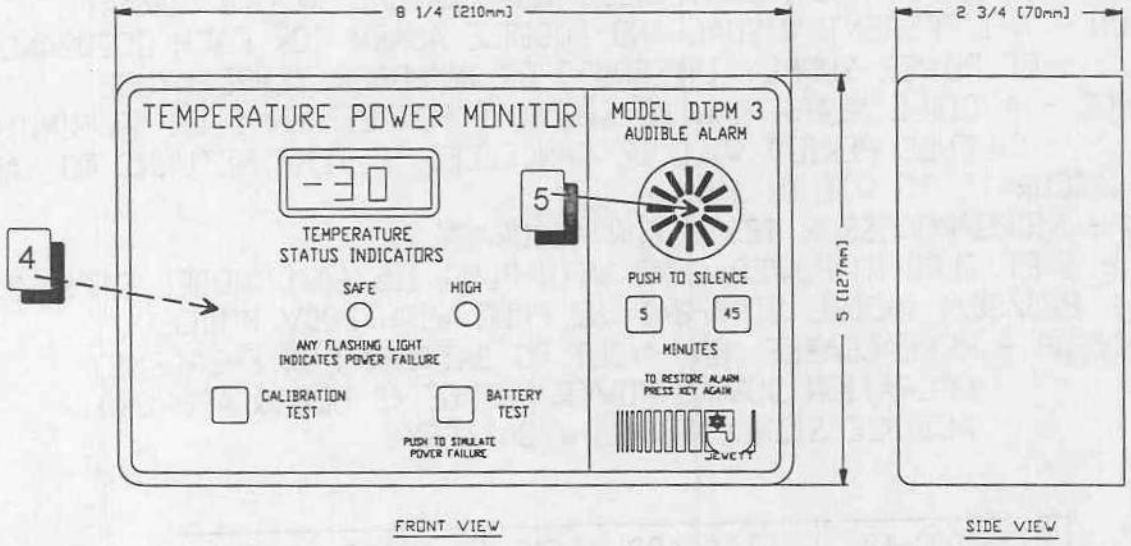
PRF161-14

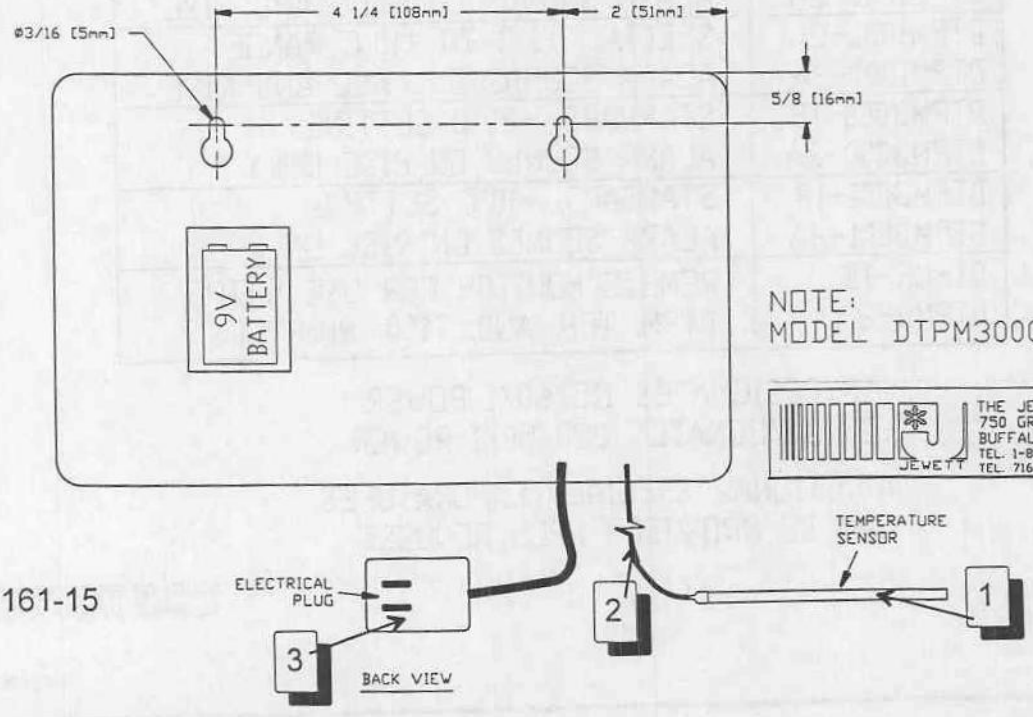
20063802

REPLACEMENT PARTS LIST

MODEL: DTPM3000-1B DIGITAL TEMPERATURE POWER MONITOR

Item #	New Part Number	Old Part Number	Description
1	MOD-D0008	100-3-9842	Thermistor Sensor
2	MOD-D0009	100-3-9843	Thermistor Cable
3	MON-D0004		Transformer 115/10 VAC
4	MON-D0016	100-3-10125	Main Board Assembly
5	MON-D0020	100-1-10214	Audible Device





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MODEL DTPM

GENERAL SPECIFICATIONS

SENSOR - THERMISTER TYPE, STAINLESS STEEL WITH 8 FT. [2.44 M] WIRES, INSTANTANIOUS RESPONSE
DIGITAL DISPLAY - CLEAR, FAST, CONTINUOUS TEMPERATURE IN LED FORMAT
ALARM SYSTEM - A DIFFERENT VISUAL AND AUDIBLE ALARM FOR EACH OCCURANCE OF POWER SUPPLY INTERRUPT OR IMPROPER TEMPERATURE
ALARM SILENCE - AUDIBLE ALARM CAN BE SILENCED FOR EITHER 5 OR 45 MINUTES SILENCE PERIOD WILL BE CANCELLED IF TEMP RETURNS TO SAFE
ACCURACY - ACCURATE TO WITHIN .1°C
CALIBRATION - MICROPROCESSOR TESTS FOR ACCURACY
ELECTRICAL - 6 FT. [1.83 M] POWER CORD WITH PLUG, 115/60/1 (MODEL DTPM-1B) 220/50/1 (MODEL DTPM-2A) (NO PLUG WITH 220V MODEL)
BATTERY BACK-UP - REPLACEABLE NINE-VOLT DC BATTERY FOR EMERGENCY OPERATION DURING POWER OUTAGE (2 HOURS APPROX.) AUDIBLE SIGNAL FOR LOW BATTERY

DTPM1000-1B DTPM1000-2A	STANDARD, +1.5°C TO +5.5°C RANGE ALARM SOUNDS ON FALL AND RISE
DTPM1001-1B DTPM1001-2A	SPECIAL, +1°C TO +10°C RANGE ALARM SOUNDS ON FALL AND RISE
DTPM3000-1B DTPM3000-2A	STANDARD, -20°C SETTING ALARM SOUNDS ON RISE ONLY
DTPM3001-1B DTPM3001-2A	STANDARD, -10°C SETTING ALARM SOUNDS ON RISE ONLY
DTPMR-1B DTPMR-2A	REMOTE MONITOR FOR USE WITH DTPM, TPM, AND, T100 MONITORS

-1B DESIGNATES 115/60/1 POWER
-2A DESIGNATES 220/50/1 POWER

ADDITIONAL SPECIAL TEMPERATURES CAN BE PROVIDED UPON REQUEST

NOTE: DESIGN OR SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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REPLACEMENT PARTS LIST

MODEL: 8ER ELECTRONIC TEMPERATURE CHART RECORDER

Item #	New Part Number	Old Part Number	Description
1	RDR043	D008-1113-00	Pen Drive Motor
2	RDR003	M13-814	Spring
3	RDR020	J7-40+25-8	Temperature Chart (-40° C. to + 25° C.)
4	RDR041	N/A	Chart Hub
5	RDR036	R16-1	Chart Chain
6	RDR038	M17-17	Magnetic Catch
7	RDR004	D24-17	Battery Lead Assembly
8	RDR012	D24-16	Battery Holder
9	RDR040	D201-0001-00	PC Board
10	RDR051	N/A	Case
11	RDR016	D008-3010-00	External Power Supply
12	RDR017	D012-0100-00	RTD Probe Assembly
13	RDR033	D011-3043-00	Membrane Switch
14	RDR037	D004-0106-00	Green LED
15	RDR042	D008-1114-00	Chart Drive Motor
16	RDR024	20-200	Mark-a-Matic II Inking System (6 Pen Set)
17	RDR035	M13-770	Pen Arm
18	RDR059	M23-127	Door Gasket
19	RDR057	M6-106	Glass
20	RDR039	M13-820	Striker Plate
21	RDR056	N/A	Door Assembly with Glass

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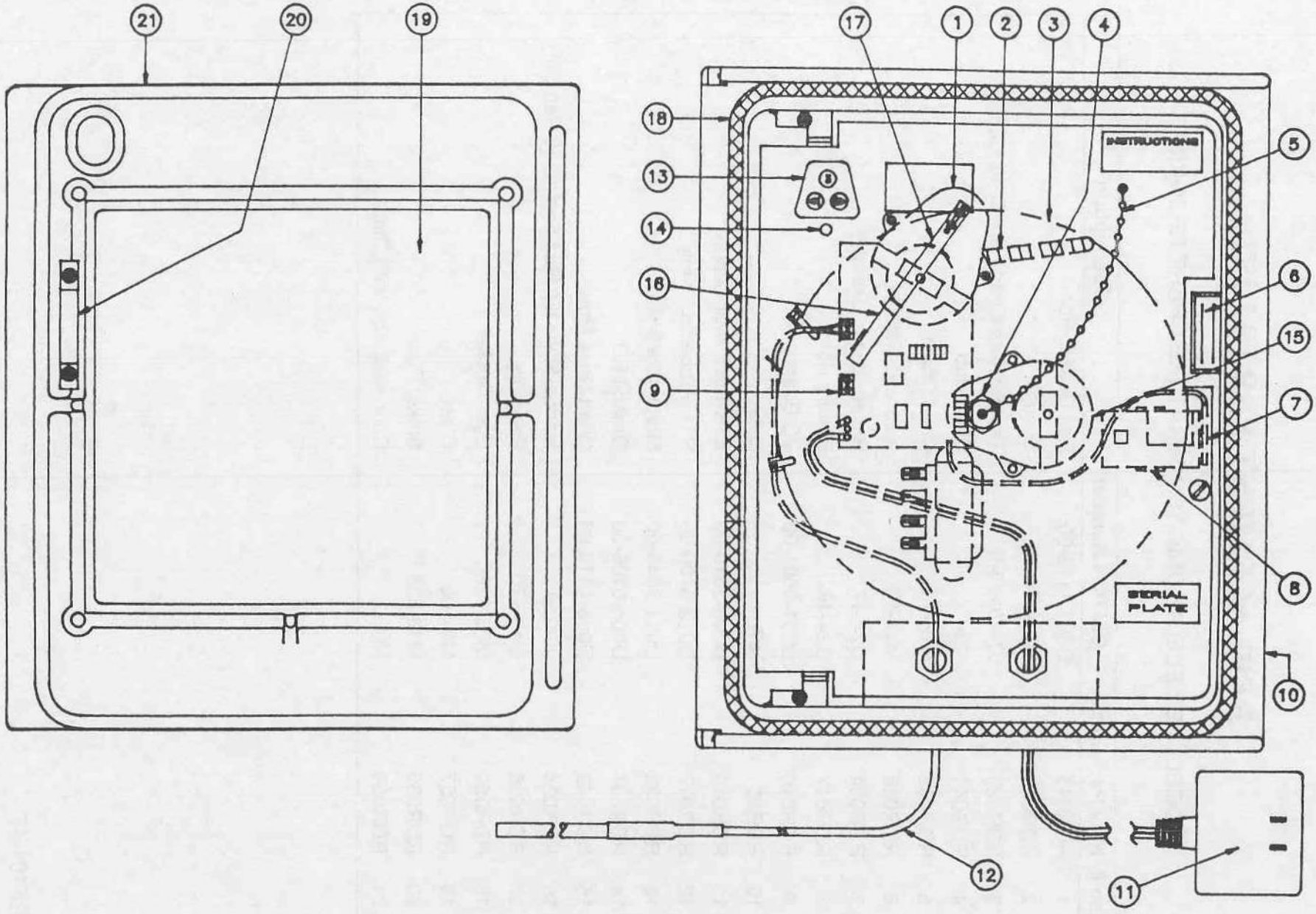


REPLACEMENT PARTS

MODEL 8ER

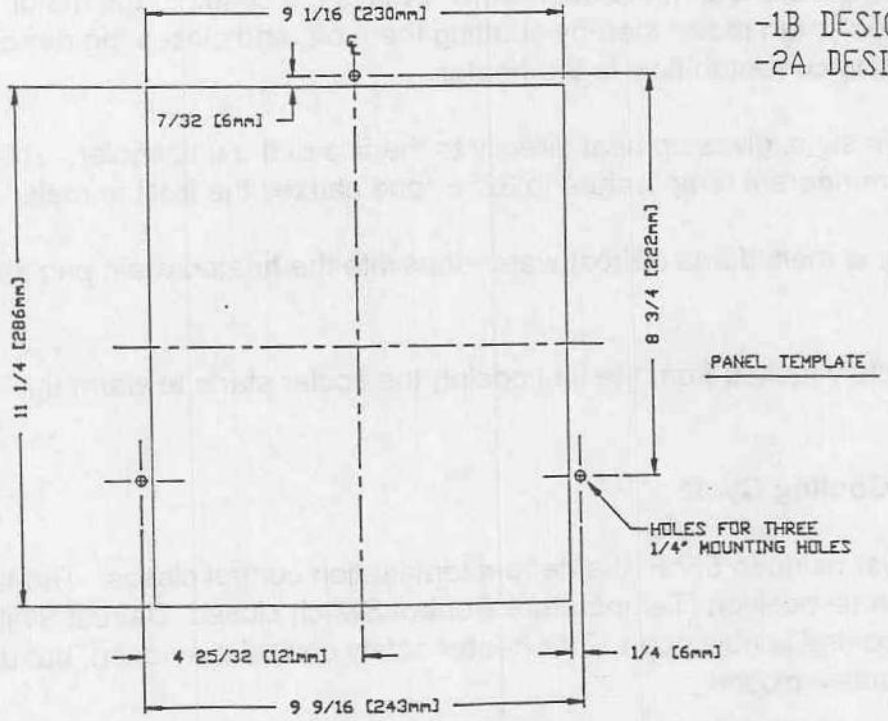
GENERAL SPECIFICATIONS

RTD SENSOR - STAINLESS STEEL WITH 8 FT. [2.44 M] WIRES
CHARTS - 8" [203mm] DIAMETER, EASY TO READ
INK PENS - MARK-A-MATIC II, CONTINUOUS FLOWING, NON-CLOGGING
TEMPERATURE RANGE - UNIQUE DUAL RANGE REFRIG/FREEZER -40° TO +25°C
ACCURACY - ACCURATE TO WITHIN .5°C
CALIBRATION - AUTOMATIC OR MANUAL
ELECTRICAL - 6 FT. [1.83 M] POWER CORD WITH PLUG, 115/60/1 (MODEL 8ER-1B)
220/50/1 (MODEL 8ER-2A) (NO PLUG ON 220V RECORDER)
BATTERY BACK-UP - REPLACEABLE NINE-VOLT DC BATTERY FOR EMERGENCY OPERATION DURING POWER OUTAGE
LED INDICATOR - GREEN POWER AND FLASHING GREEN POWER FAILURE

CAN BE RETROFITTED TO EXISTING JEWETT EQUIPMENT IN THE FIELD AS WELL AS OTHER BRANDS OF REFRIGERATORS AND FREEZERS.

ACCESSORIES:
RDR020 - REFRIG/FREEZER -40° TO +25°C
RDR024 - REPLACEMENT PENS

-1B DESIGNATES 115-60-1
-2A DESIGNATES 220-50-1



NOTE: DESIGN OR SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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SEQUENCE OF OPERATION

The ***Temperature Control Switch*** controls current to the motor compressor and unit cooler fan motor. The ***Defrost Switch*** controls current to the defrost heater.

NOTE: Both switches are located in the temperature control/defrost timer.

STEP "1": Normal Refrigeration Operation

1. The fan delay control is closed.
2. The defrost heater is off.
3. The condensing unit operates in accordance with the demands of the refrigeration system.
4. The unit cooler fan operates continually. However, the door switch will deactivate the fan motor when the door is opened.
5. Frost builds up slowly on the unit cooler.

STEP "2": - Defrost Cycle

1. The unit cooler defrost cycle is started automatically by the timer at predetermined times.
2. The timer opens the temperature control switch which breaks the circuit to the motor compressor and unit cooler fan motor thereby shutting them off; and closes the defrost switch, thereby permitting current to flow to the heater.
3. The heater, recessed in slots, gives up heat directly to the fins of the unit cooler. This heat raises unit cooler and refrigerant temperature to 32° F. and causes the frost to melt.
4. Frost on the unit cooler is melted and defrost water drips into the heated drain pan and flows down the drain.
5. When frost has completely melted from the unit cooler, the cooler starts to warm up beyond 32° F.

STEP "3": - Unit Cooler Re-Cooling Cycle

1. When the unit cooler warms up to 55° F. the defrost termination control closes. The timer switches back to its normal position (Temperature Control Switch closed, Defrost Switch open). The fan delay control is now open. The heater safety control may open, but under normal operation will remain closed.

The heater safety thermostat would open only if the defrost termination fails.

2. The compressor starts.

3. The unit cooler fan motor remains OFF, so that warm air will not enter the refrigerated space.

4. The evaporator coil cools down approaching operating temperatures.

STEP "4": - Return to Normal Operation

1. When the coil temperature reaches 16° F. (-8.9° C.), the fan control switch closes. Current flows to the fan motor and the unit returns to normal operation.

CTL040 TEMPERATURE CONTROL/DEFROST TIMER SETTINGS

Setpoint Dial	1
Differential Dial	2
Termination Time	20
Termination Temperature	7 - 10
Dip Switches (Every 8 Hours)	# 1, # 2 & # 4 Up - # 3 Down
J2 Jumper (Electric)	"N"

TEMPERATURE CONTROL/DEFROST TIMER INSTRUCTIONS - CTL040

OPERATION

The CTL040 incorporates the latest in solid state electronics providing the functions of refrigeration temperature and defrost control in a single compact controller. The temperature control function precisely senses refrigerated space temperature. It cycles the compressor or solenoid valve to provide +1° F. accurate temperature control under all conditions of ambient temperature. When a defrost is initiated, the temperature contacts open to shut off the compressor (in hot gas mode they close to operate the compressor during defrost). When defrost terminates, the temperature control contacts are allowed to close to turn on the compressor. The defrost timer function initiates defrost at selectable time intervals rather than on a time of day basis. At the end of the time interval, the switch closes, energizing electric defrost heaters (or hot gas solenoid valve). Simultaneously, the temperature control switch opens (closes in hot gas mode). At termination from either time, temperature or remote source, the defrost switch opens the defrost heater or hot gas solenoid circuit and the temperature control is allowed to close, restarting refrigeration. Defrost duration is controlled by an adjustable duration timer. It automatically terminates the defrost or acts as a back up termination if temperature of remote termination is used. Adjustable temperature termination is built in and may be used by the addition of a sensor placed on the evaporator.

SET POINT DIAL

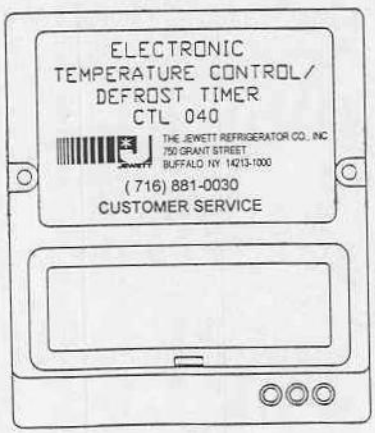
Turning the dial knob changes the "cut-in" and "cut-out" setting, clockwise for warmer, counter-clockwise for colder. The set point may be fixed by using a fixed resistor on the remote set point terminals and moving the J3 jumper the "EX".

DIFFERENTIAL DIAL

Turning the dial knob changes the "cut-in" only, the "cut-out" remains the same. Turn the dial knob clockwise for wider differential and counter-clockwise for narrower differential.

ELECTRIC/HOT GAS JUMPER

Defrost mode may be selected by moving the J2 jumper to "N" for normal electric defrost or "HG" for hot gas defrost.



COVER

PRF161-22

TIME TERMINATION DIAL

The defrost duration timer starts when a defrost initiates and will automatically terminate the defrost when the time set on the dial expires. If any of the temperature termination methods are used, the time termination will override them and terminate the defrost.

TEMPERATURE TERMINATION DIAL

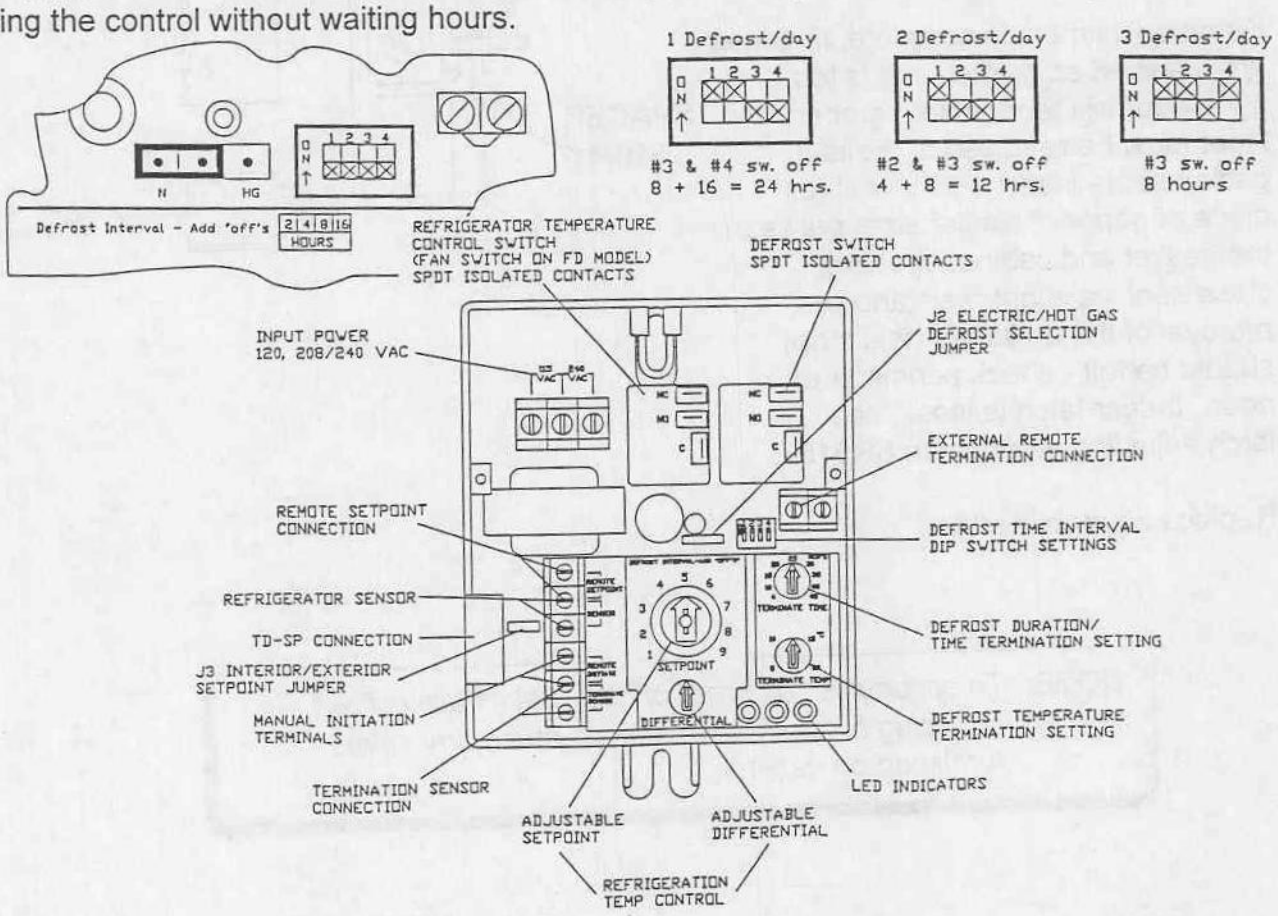
The termination set point dial may only be enabled through the utilization of a termination temperature sensor. When the temperature at the sensor rises to the termination setting, the defrost is automatically terminated.

MANUAL INITIATION

Many users require a means of initiating a defrost at other than the scheduled time due to unusual conditions. Remote initiate terminals are provided to allow initiation by simply shorting across them. Manual termination may also be accomplished by momentarily shorting across the terminate sensor terminals.

DEFROST INTERVALS

Set defrost timer interval on DIP switch adjacent to "Terminate Time" dial. Each switch adds it's numerical value to the interval between defrosts when it is in the off position. Switch 1 adds 2 hours, switch 2 adds 4 hours, switch 3 adds 8 hours and switch 4 adds 16 hours. The 4 switches provide 16 combinations establishing choices of defrost intervals from 2 to 30 hours in 2 hour increments. With all switches "ON", interval is approximately 4 minutes, providing a means for testing the control without waiting hours.



HINGE ADJUSTMENT

HINGE ADJUSTMENT

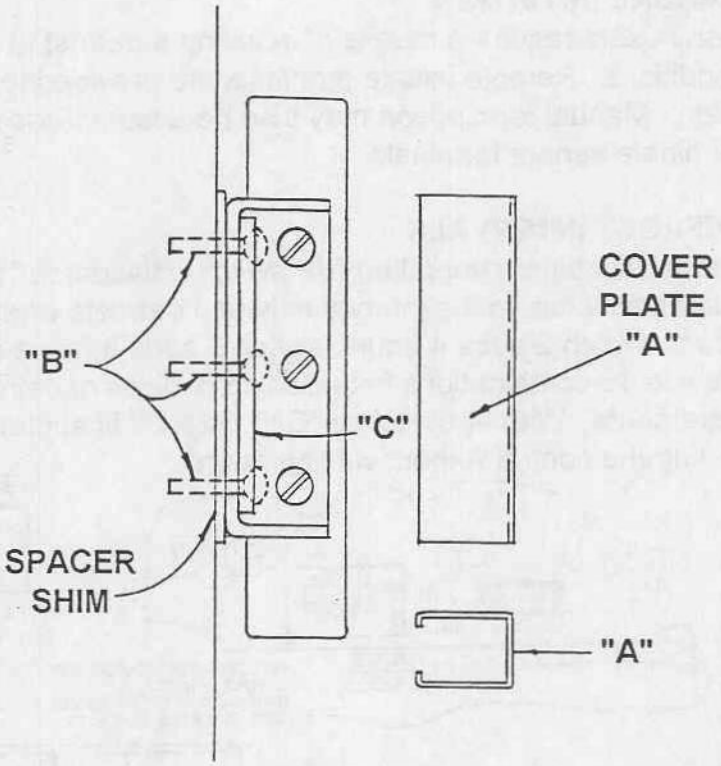
A. Remove exterior hinge cover plate by opening refrigerator door. Place screwdriver under interior portion of cover, gently pry cover outward. Pull straight out. Close door.

B. Loosen the three (3) screws "B" which hold adjusting plate "C" in position.

C. To tighten gasket seal, place hand against exterior of door near hinges, gently press in on door so gasket sits firmly against cabinet face. Tighten screws "B".

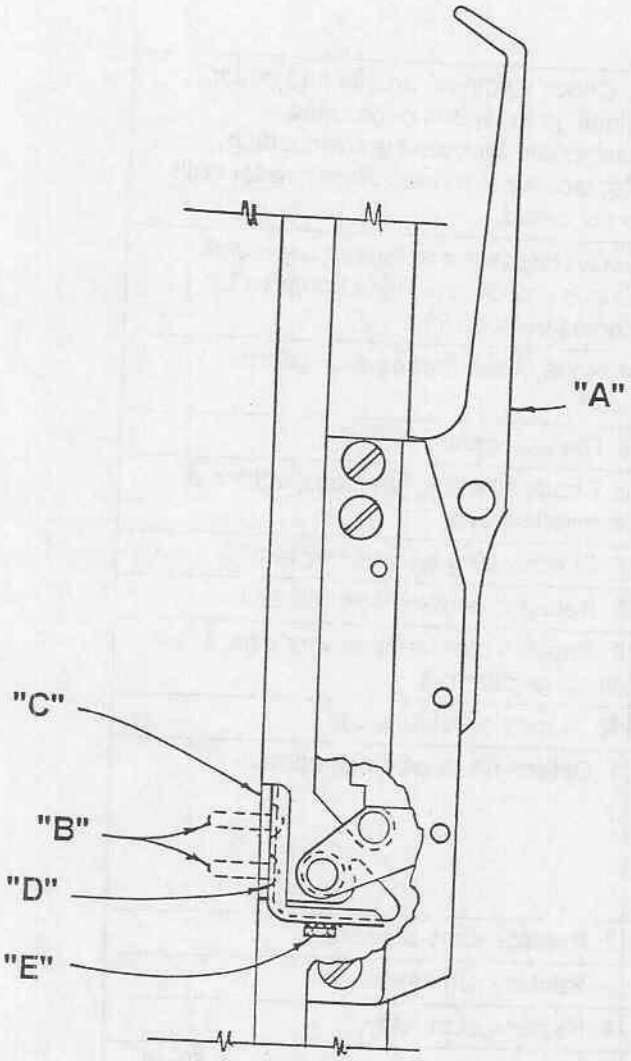
D. When adjustment is complete, if hinges are adjusted so gasket seal is too tight, door will tend to spring open. Door must be readjusted. To test gasket seal - insert a dollar bill (or piece of paper of similar size) between the gasket and cabinet opening; close door - a slight resistance to removal of the dollar bill (test strip) should be felt - check perimeter of door. If door latch is loose, see latch adjusting information SR915-B.

E. Replace cover plate "A".



NOTE: *To accomplish different offsets, shims are utilized. If replacing hinges, make sure to reuse any shims furnished on cabinet.*

LATCH ADJUSTMENT



LATCH & STRIKE ADJUSTMENT

A. Latch as fastened to door.

B. For up or down adjustment (proper latch engagement), loosen mounting screws"B".

C. Strike plate "C" remains in position.

D. Move strike "D" up or down as required and tighten screws "B" when adjustment is satisfactory. No play will be present in latch handle with door closed.

E. For in and out adjustment (proper gasket seal), loosen screw "E". Adjust in or out as required and tighten screw when adjustment is satisfactory.

NOTE: *This stainless steel hex head cap screw is 10/32 X 5/16 long, or use Jewett part number BLT03C02A006. Use box wrench, open end wrench, or ratchet to tighten. Do not use a nut driver or pliers.*

NOTE: *If replacing latch and strike assembly, make sure to reuse any shims furnished on cabinet.*

TROUBLE SHOOTING SERVICE CHART

	SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
A	Compressor will not start, no hum	1. Line disconnect switch open.	1. Close disconnect switch
		2. Fuse blown or breaker tripped.	2. Check electrical circuits and motor windings for shorts or grounds. Investigate for possible overloading. Replace fuse or reset breaker after fault is corrected.
		3. Thermal overload tripped.	3. Overloads are automatically reset. Check unit closely when compressor comes back on line.
		4. No cooling required	4. None. Wait until control calls for cooling.
		5. Control contacts stuck in open position.	5. Replace control.
		6. Loose wiring.	6. Check all wiring junctions, tighten all terminal screws.
		7. Improper wiring	7. Check wiring against diagram.
		8. Liquid line solenoid valve will not open.	8. Repair or replace solenoid coil
		9. Motor electrical trouble.	9. Check motor for open windings, Short circuit or burn out.
		10. Liquid line solenoid will not open.	10. Repair or replace coil.
B	Compressor will not start, hums but trips on thermal overload.	1. Low voltage to unit.	1. Determine reason and correct.
		2. Start capacitor failure or wrong.	2. Replace start capacitor.
		3. Run capacitor failure or wrong.	3. Replace run capacitor.
		4. Start relay failure or wrong.	4. Replace start relay.
		5. Motor electrical trouble.	5. Check motor for open windings, Short circuit or burn out.
		6. Internal mechanical trouble in compressor.	6. Replace compressor.
		7. Improper wiring	7. Check wiring against diagram.
		8. Excessively high discharge pressure.	8. See high discharge pressure symptom.
C	Compressor starts, but does not switch off of start winding.	1. Low voltage to unit.	1. Determine reason and correct.
		2. Run capacitor failure or wrong.	2. Replace run capacitor.
		3. Start capacitor failure or wrong.	3. Replace start capacitor.

TROUBLE SHOOTING SERVICE CHART

SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
	4. Start relay failure or wrong.	4. Replace start relay.
	5. Motor electrical trouble.	5. Check motor for open windings, Short circuit or burn out.
	6. Internal mechanical trouble in compressor.	6. Replace compressor.
	7. Improper wiring.	7. Check wiring against diagram.
	8. Excessively high discharge pressure.	8. See high discharge pressure symptom.
D Compressor starts and runs, but short cycles on overload protector.	1. Excessively high discharge pressure.	1. See high discharge pressure symptom.
	2. Low voltage to unit.	2. Determine reason and correct.
	3. High voltage to unit.	3. Determine reason and correct.
	4. Thermal overload protector defective.	4. Check current, Replace protector.
	5. Run capacitor failure or wrong.	5. Replace run capacitor.
	6. Motor electrical trouble.	6. Check motor for open windings, Short circuit or burn out.
	7. Improper wiring causing additional current to pass through overload protector.	7. Check wiring diagram. Check for added fan motors, heaters, etc., connected to wrong side of protector.
E Compressor starts and runs, but short cycles on temperature or pressure controls.	1. Differential set too close.	1. Widen differential.
	2. High discharge pressure.	2. See high discharge pressure symptom.
	3. Low discharge pressure.	1. See low discharge pressure symptom.
F Compressor runs long or continuously.	1. Shortage of refrigerant.	1. Leak check and repair.
	2. Control contacts stuck or frozen.	2. Clean contacts or replace control.
	3. Refrigerated air space has an excessive load.	3. Determine reason and correct.
	4. Dirty Condenser	4. Clean condenser.
	5. Evaporator coil iced.	5. Defrost and check defrost circuit.
	6. Restriction in refrigeration system.	6. Determine location and remove.
	7. Evaporator fan motors not running.	7. Determine reason and correct. Check door switch.

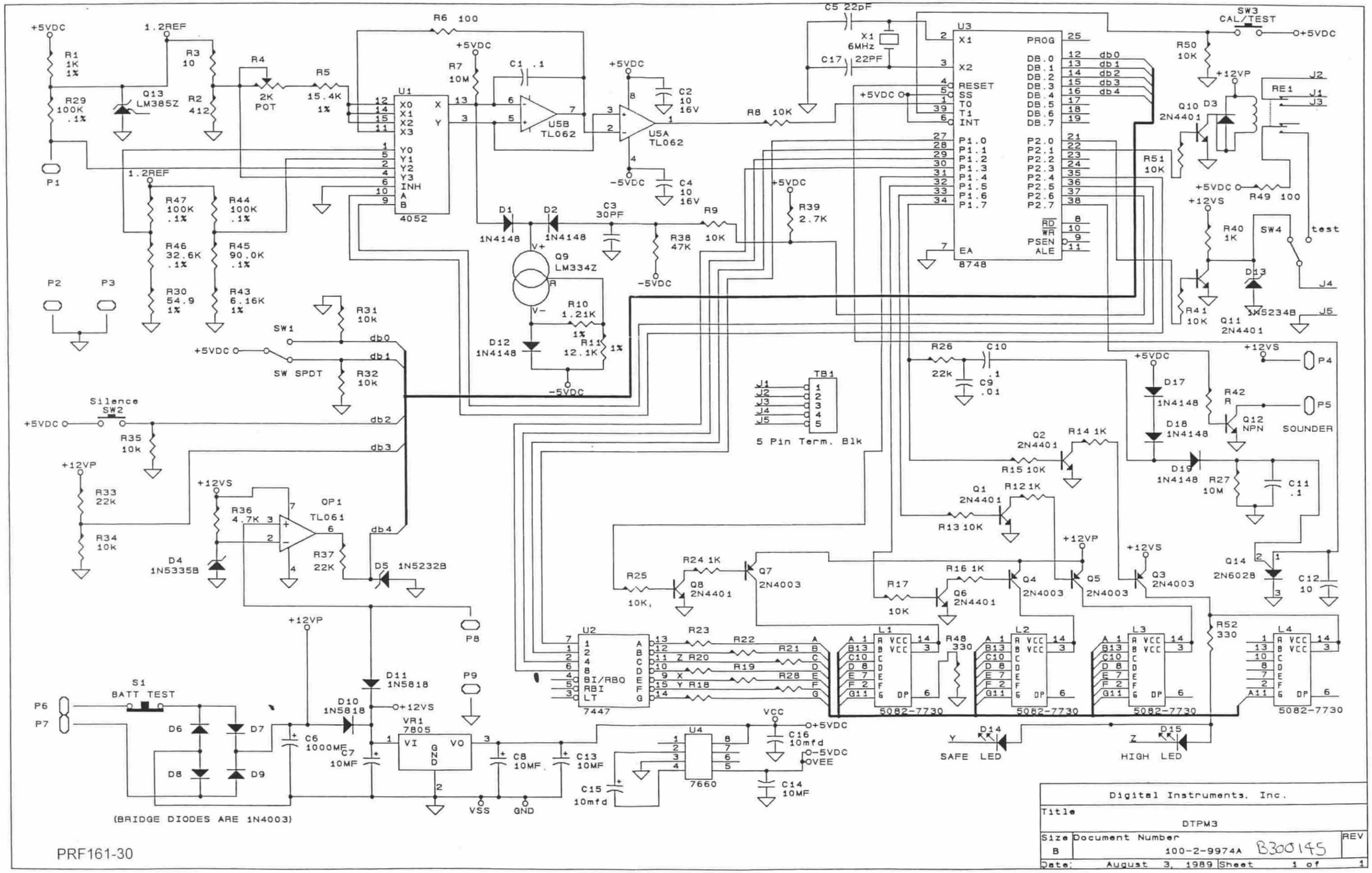
TROUBLE SHOOTING SERVICE CHART

SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
Compressor noisy or vibrating.	1. Flooding of refrigerant into crankcase.	1. Check expansion device and refrigerant charge.
	2. Improper piping support.	2. Relocate tubing or add hangers.
	3. Worn compressor.	3. Replace compressor.
	4. Loose parts or mounting.	4. Find and tighten.
	5. Condenser fan blade loose or impeded.	5. Check and repair.
High Discharge pressure.	1. Non-condensables in system.	1. Remove the non-condesables.
	2. System overcharged with refrigerant.	2. Correct the charge.
	3. Discharge shutoff valve partially closed.	3. Open valve.
	4. Condenser fans not running.	4. Check electrical circuit.
	5. Dirty condenser.	5. Clean.
Low discharge pressure.	1. Suction shutoff valve partially closed.	1. open valve.
	2. Insufficient refrigerant in system.	2. Check for leaks. Repair and add charge.
	3. Low suction pressure.	3. See low suction pressure symptom.
High suction pressure.	1. Excessive load.	1. Reduce load or add additional equipment.
	2. Expansion valve overfeeding.	2. Check remote bulb. Adjust superheat.
Low suction pressure.	1. Insufficient refrigerant in system.	1. Check for leaks. Repair and add charge.
	2. Restriction in refrigeration system. Most notably the liquid line filter drier or capillary.	2. Determine location and remove.
	3. Expansion valve malfunctioning.	3. Check and reset for proper superheat.
Suction line frosted or sweating.	1. Expansion valve passing excess refrigerant or is oversized.	1. Readjust valve or replace with smaller valve.
	2. Expansion valve stuck open.	2. Clean valve of foreign particles, and replace if necessary.
	3. Evaporator fan motors not running.	3. Determine reason and correct. Check door switch.

TROUBLE SHOOTING SERVICE CHART

SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
	4. System overcharged with refrigerant.	4. Correct the charge.
Liquid line frosted or sweating	1. Restriction in liquid line filter drier.	1. Determine location and remove.
	2. Liquid line shutoff valve partially closed.	2. Open valve.
Ice accumulating on ceiling around evaporator and/or on fan guards or blades.	1. Defrost duration too long.	1.Adjust defrost termination.
	2. Fan delay not delaying fans after defrost period.	2. Defective fan delay thermostat. Replace.
	3. Defective timer.	3. Replace.
	4. Too many defrost cycles per day.	4. Adjust timer for less defrost cycles.
Evaporator coil not clearing of frost during defrost cycle.	1. Coil temperature not getting above freezing point during defrost.	1. Check heater operation, or hot gas solenoid valve.
	2. Not enough defrost cycles per day.	2. Adjust timer for more defrost cycles.
	3. Defrost cycle too short.	3. Adjust timer for longer defrost cycle.
	4. Poor door seal.	4. Adjust door latch, install new gasket.
	5. Defective timer or defrost thermostat.	5. Replace defective component.
Ice accumulating in drain pan.	1. Defective heater.	1. Replace heater.
	2.Unit not pitched properly.	2. Check and adjust if necessary.
	3. Drain line plugged.	3. Clean drain line.
	4. Defective drain line heater.	4. Replace heater.
	5. Poor contact between drain pan and heater element.	5. Repair.
	6. Defective timer or defrost thermostat.	6. Replace defective component.

NOTE: Jewett Refrigerators and Freezers are designed to operate in areas that are heated to 60° F (15.6° C). Installation in unheated areas may require a low temperature compressor protection kit for satisfactory operation.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1.2REF
R1 1K 1%
R29 100K .1%
P1
Q13 LM385Z
R3 10
R2 412
R4 2K POT
R5 15.4K 1%
R6 100
R7 10M
C1 .1
U1
X0
X1
X2
X3
Y0
Y1
Y2
Y3
INH
A
B
4052
U5B TL062
U5A TL062
C2 10 16V
C4 10 16V
-5VDC
R8 10K
C5 22pF
X1 6MHz
C17 22PF
U3
X1
X2
RESET
SS
T0
T1
INT
EA
PROG
P1.0
P1.1
P1.2
P1.3
P1.4
P1.5
P1.6
P1.7
P2.0
P2.1
P2.2
P2.3
P2.4
P2.5
P2.6
P2.7
RD
WR
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ALE
8748
db0
db1
db2
db3
db4
SW3 CAL/TEST
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+12VP
J2
RE1
J1
J3
Q10 2N4401
D3
R51 10K
R49 100
+12VS
R40 1K
SW4
test
J4
D13 1N5234B
J5
R41 10K
Q11 2N4401
R47 100K .1%
R44 100K .1%
R46 32.6K .1%
R45 90.0K .1%
R30 54.9 1%
R43 6.16K 1%
P2
P3
D1 1N4148
D2 1N4148
C3 30PF
R9 10K
R38 47K
R39 2.7K
Q9 LM334Z
V+
V-
R
R10 1.21K 1%
R11 12.1K 1%
D12 1N4148
R31 10k
SW1
SW SPDT
R32 10k
Silence SW2
R35 10k
R33 22k
R34 10k
+12VP
+12VS
R36 4.7K
OP1 TL061
R37 22K
D4 1N5335B
D5 1N5232B
P8
P9
TB1
J1
J2
J3
J4
J5
5 Pin Term. Blk
R26 22k
C10 .1
C9 .01
D17 1N4148
D18 1N4148
D19 1N4148
R42 R
Q12 NPN
P4
P5
SOUNDER
Q2 2N4401
R14 1K
R15 10K
Q1 2N4401
R12 1K
R13 10K
R27 10M
C11 .1
Q14 2N6028
C12 10
R24 1K
R25 10K
Q8 2N4401
Q7 2N4003
R16 1K
R17 10K
Q6 2N4401
Q4 2N4003
Q5 2N4003
Q3 2N4003
U2
7447
R23
R22
R21
R20
R19
R28
R18
L1
L2
L3
L4
5082-7730
R48 330
R52 330
S1
BATT TEST
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P7
D6
D7
D8
D9
D10 1N5818
D11 1N5818
C6 1000MF
C7 10MF
VR1 7805
C8 10MF
C13 10MF
U4
7660
C15 10mfd
C16 10mfd
C14 10MF
VCC
+5VDC
-5VDC
VEE
VSS
GND
D14
SAFE LED
D15
HIGH LED
(BRIDGE DIODES ARE 1N4003)
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Document Number 100-2-9974A
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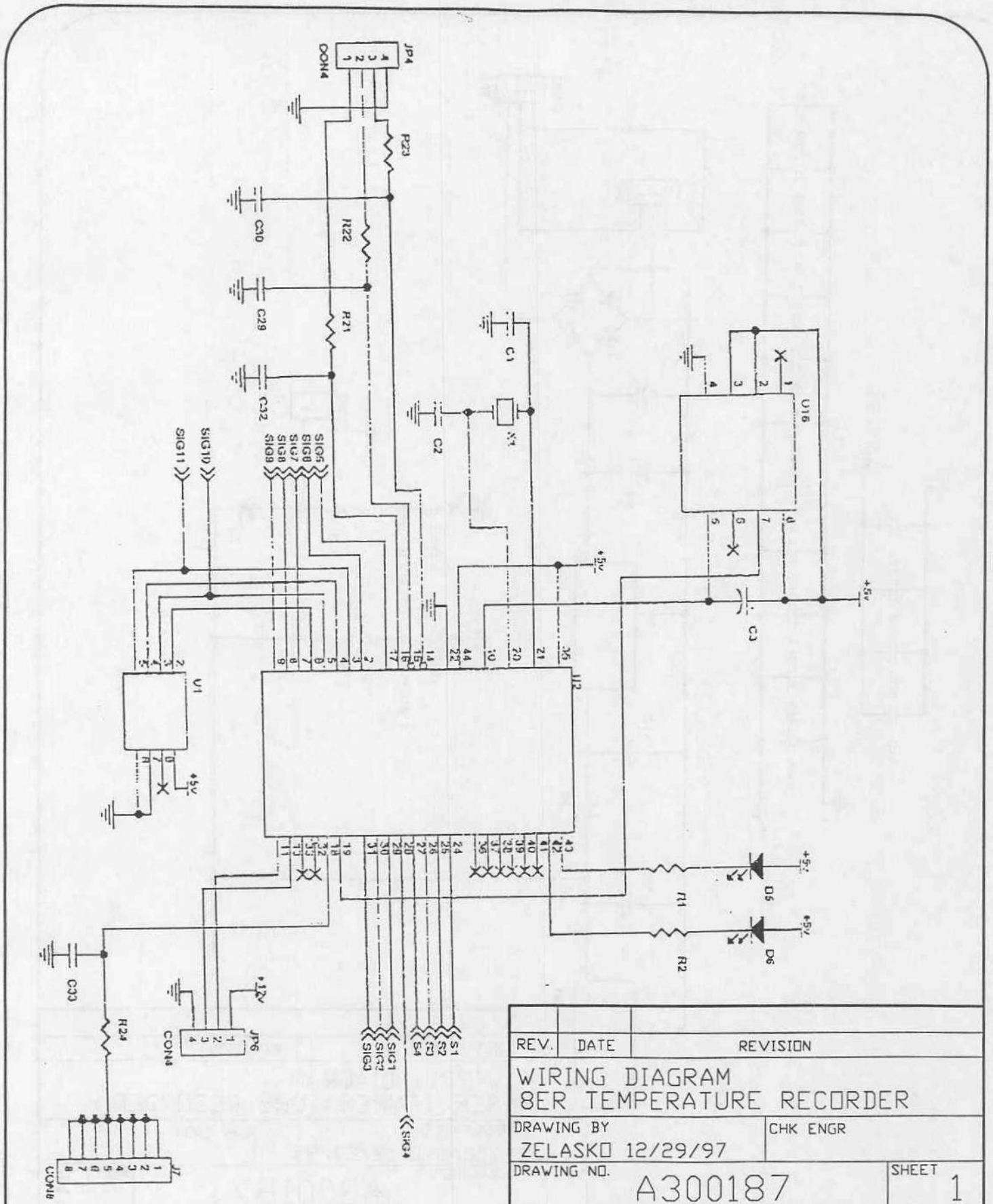
Date: August 3, 1989
Sheet 1 of 1



REV.	DATE	REVISION

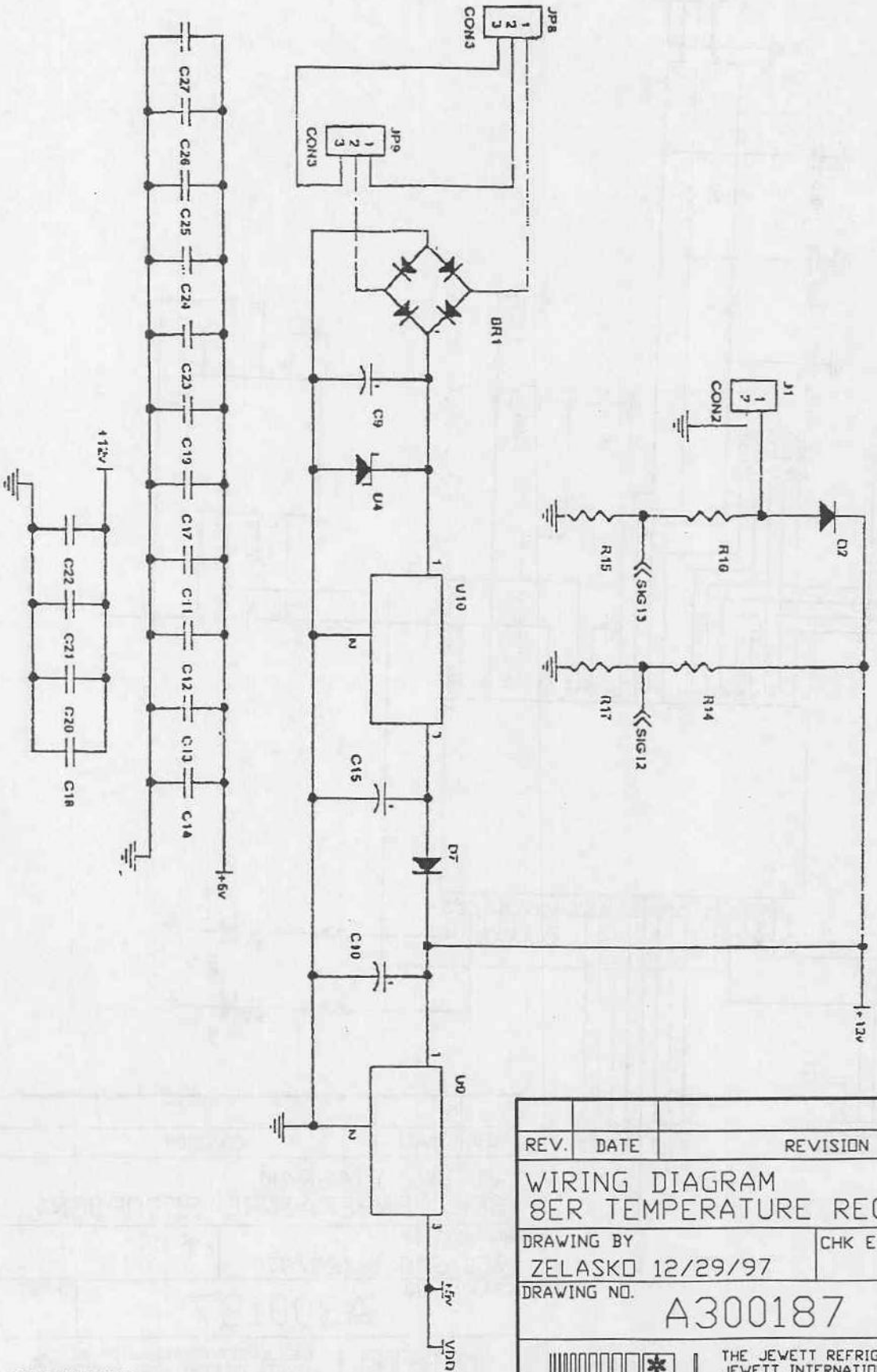
WIRING DIAGRAM
8ER TEMPERATURE RECORDER

DRAWING BY	CHK ENGR
ZELASKO 12/29/97	

DRAWING NO.	SHEET
A300187	1

THE JEWETT REFRIGERATOR CO., INC.
JEWETT INTERNATIONAL CORPORATION
750 GRANT STREET,
BUFFALO, NY 14213-1000

PRF116-32



REV.	DATE	REVISION

WIRING DIAGRAM
8ER TEMPERATURE RECORDER

DRAWING BY	CHK ENGR
ZELASKO 12/29/97	

DRAWING NO.	SHEET
A300187	2

THE JEWETT REFRIGERATOR CO., INC.
JEWETT INTERNATIONAL CORPORATION
750 GRANT STREET,
BUFFALO, NY 14213-1000

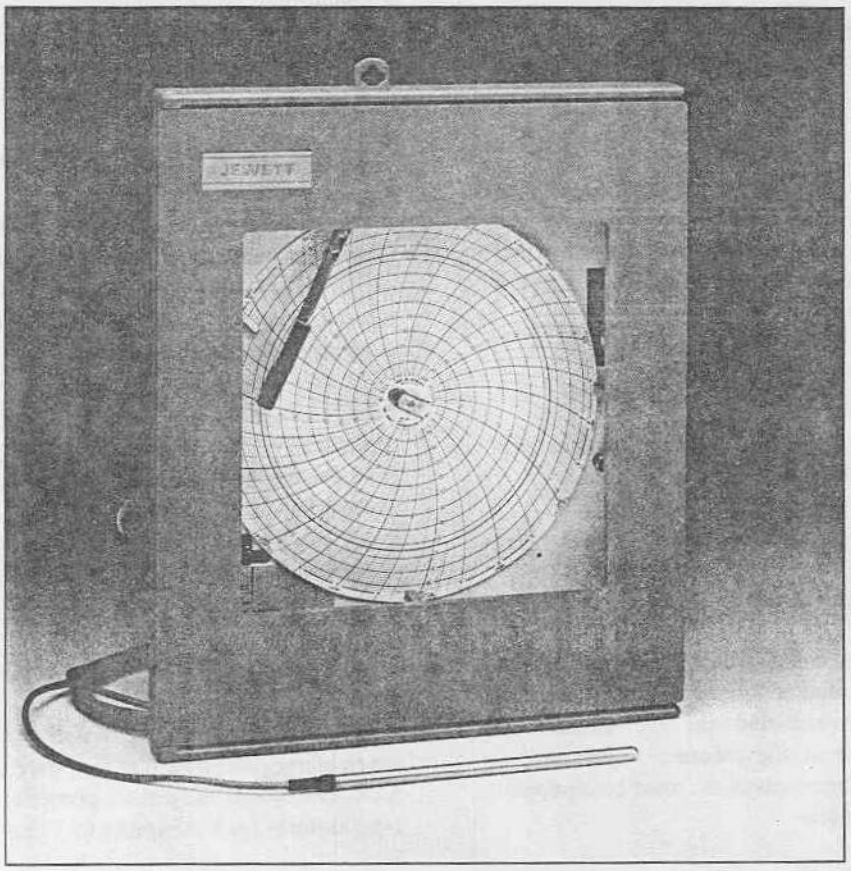
PRF116-33

The Jewett Refrigerator Co., Inc.
Jewett International Corporation
750 Grant Street, Buffalo, New York 14213-1000

Phone: USA/CANADA 1-800-879-7767 (716) 881-0030
Fax: (716) 881-6092

ELECTRONIC TEMPERATURE RECORDER FOR REFRIGERATORS AND FREEZERS

Produces Instantaneous Readings and Precise Measurement of Temperature History



Models 8ER-1B and 8ER-2A

Ideal for Jewett and Other Brand Refrigerators and Freezers

- Blood Banks
- Clinical Laboratories
- Industrial and Life Science Laboratories
- Biomedical Research
- Pharmacies and Pharmaceutical Manufacturing

PRF161-34

JEWETT

People Dedicated to Product Quality and Customer Satisfaction

GENERAL INFORMATION

Please read the instructions carefully before installing this instrument.

This recorder is shipped with the following items:

One box (52) RDR020 Freezer Temperature Charts with Blue Ink (J7-40+25-8)
9 Volt Alkaline Battery

When ordering replacement parts, refer to the parts list for part numbers and description. Please specify type (model) and serial numbers as listed on the recorder when ordering.

This microprocessor based electronic recorder with battery back up can be used for both refrigerator and freezer applications. This recorder will function under normal conditions and with proper care it will render lasting accurate service.

INSTALLATION

If possible, select a well lighted location that is free from dust, dirt and corrosive fumes.

The instrument case is provided with three (3) mounting bolts with brackets for wall or flush mounting. See the drawing on page 3 for details.

Jewett Refrigerators and Freezers are equipped at the factory for easy installation of this temperature recorder. An access port is provided on the cabinet to accommodate passage of the recorder sensor probe. Brands other than Jewett equipment must be equipped with a similar access port.

Remove the gray sealer (Perma Gum) from the access port and insert the sensor probe into the cabinet.

Jewett Blood Bank Refrigerators and Blood Plasma Freezers are supplied with a polyethylene bottle and stainless steel bracket mounted in the cabinet interior. These bottles should be filled with the following solutions:
Refrigerators - 10% Glycerine and 90% Water
Freezers - 50% Glycol Antifreeze and 50% Water

Insert the sensor probe into the solution bottle. Reseal the access port and bottle top to prevent evaporation of the solution..

Connect the power supply to the appropriate voltage power source.

8ER-1B - 115/60/1
8ER-2A - 220/240/50/60/1

CHART PAPER CHANGE

Press and hold the Change Chart push button switch for 1 second until the pen begins to move to the left of the chart. To remove the chart, unscrew the knob at the center of the chart. Position the new chart so that the correct time line coincides with the time line groove on the chart plate, then replace the knob and screw tightly against the chart. Again push the Change Chart push button switch for 1 second until the pen begins to move back onto the chart. Check to make sure that the pen is marking on the paper. If not, lightly adjust the pen arm to establish contact with the paper.

MARK-A-MATIC II INKING SYSTEM

The pen consists of a self contained ink reservoir with a porous plastic stylus which is snapped around the outer edge of the pen arm. Two (2) screws are provided at the top of the pen arm to adjust the length to ensure that the pen tracks the time line on the chart. Check the length after each pen replacement and adjust accordingly if required. If the stylus does not touch the chart, adjustment can be made by slightly bending the pen arm in the center. Do not use more pressure than is necessary to create a fine line. Note: As the ink supply runs out the ink color will become lighter. This indicates that the pen should be replaced. To reorder use part number RDR024.

BATTERY BACK-UP

If AC power fails the LED will change to a flashing green alerting the user that the power has failed. The 9 VDC battery will allow the recorder to sense and record temperatures for a minimum of 12 hours.

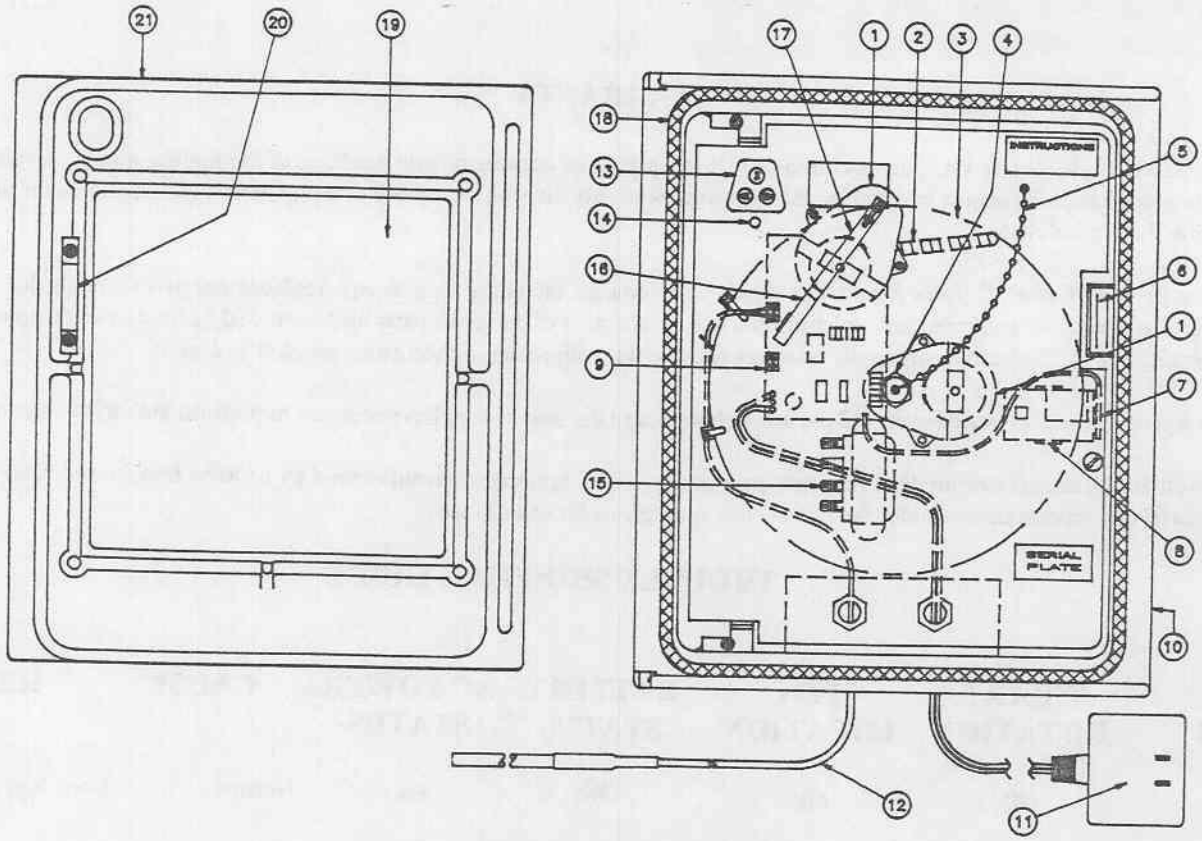
CALIBRATION

This recorder has been accurately calibrated at the factory. Before making any adjustments this instrument should be in service for 24 hours. Thereafter, if any adjustment is required perform the following procedure:

1. Place a Certified Test Thermometer in the solution bottle alongside the sensor.

2. After three (3) minutes compare the recorder to the test thermometer.

3. If an adjustment is required, a correction can be made pressing one of the arrow buttons. Press the right arrow (# 2) button and the pen will move to the right. Press the left arrow button (#1) and the pen will move to the left. **Note: The pen will not begin to move until the arrow button is held for at least five (5) seconds.**



REPLACEMENT PARTS

ITEM	PART NO.	DESCRIPTION
1	RDR002	Motor
2	RDR003	Spring
3	RDR020	Chart (J7-40+25-8)
4	RDR041	Chart Hub
5	RDR036	Chart Chain
6	RDR038	Magnetic Catch
7	RDR004	Battery Lead Assembly
8	RDR012	Battery Holder
9	RDR040	PC Board
10	RDR051	Case
11	RDR016	External Power Supply

ITEM	PART NO.	DESCRIPTION
12	RDR017	RTD Probe Assembly
13	RDR033	Membrane Switch
14	RDR037	LED
15	RDR031	Internal Transformer (220-50/60-1)
16	RDR024	Mark-a-Matic II (includes 6 Red Ink Cartridges and 1 additional Pen Arm)
17	RDR035	Pen Arm
18	RDR059	Door Gasket
19	RDR057	Glass
20	RDR039	Striker Plate
21	RDR056	Door Assembly with Glass

JEWETT

People Dedicated to Product Quality and Customer Satisfaction

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Jewett International Corporation
750 Grant Street, Buffalo, NY 14213-1000

Phone: USA/CANADA 1-800-879-7767 (716) 881-0030
Fax: (716) 881-6092

WARRANTY

The Jewett Refrigerator Co., Inc. is committed to supplying its customers with products of the highest quality. Jewett ensures product performance by offering the following warranty on each new piece of equipment it manufactures for use within the United States.

For a period of two (2) years Jewett will supply at no charge, including freight, any replacement part that fails due to defects in material or workmanship under normal use. Inspection of defective parts by Jewett will be final in determining warranty status. Defective parts must be returned, prepaid, with return authorization number to Jewett.

For a period of one (1) year Jewett will pay labor charges and the cost of supplies necessary to perform authorized repairs.

Jewett International Corporation warrants each new piece of equipment manufactured by us to be free from defects in material and workmanship under the normal use and service for one (1) year.

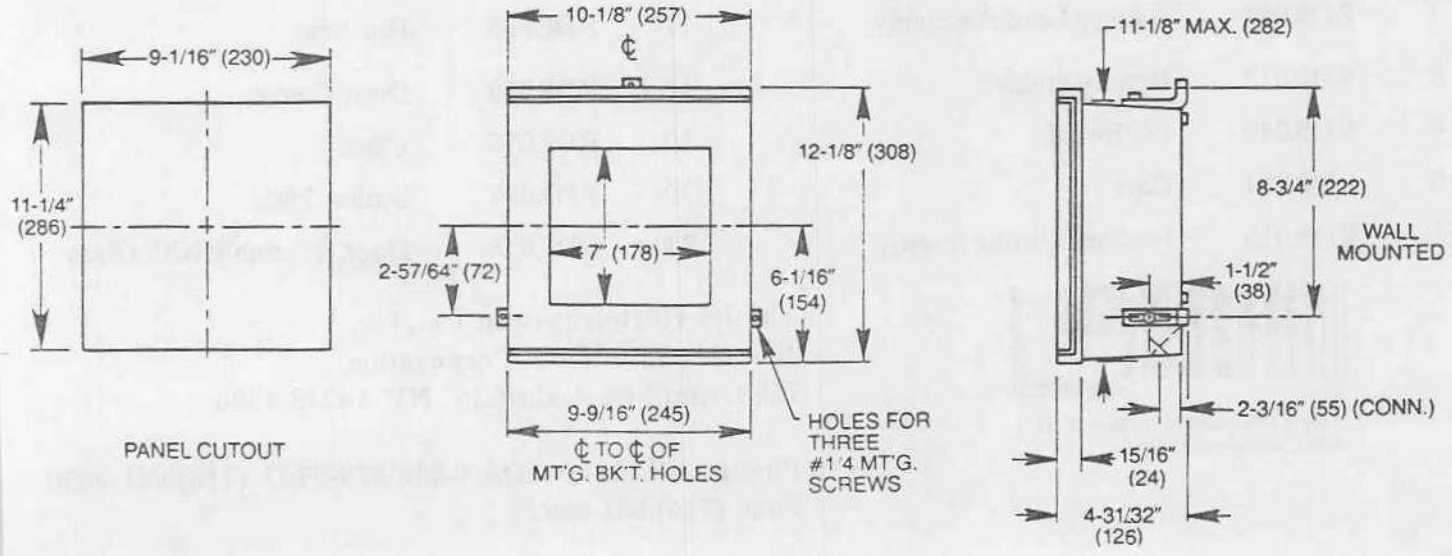
TROUBLE SHOOTING GUIDE

LED STATUS	CHART ROTATION	PEN LOCATION	BATTERY STATUS	AC POWER STATUS	CAUSE	REPAIR
Green	OK	OK	OK	OK	Normal	None Required
Flashing Green	OK	OK	LOW	OFF	AC Failure or Low Battery	Check Power Source & Transformer-Replace Battery if necessary
Green	OK	Inner Hub	OK	OK	Probe Failure	Check Connection on Board - Replace Probe

If technical assistance is required please contact Jewett Technical Service at (800) 879-7767

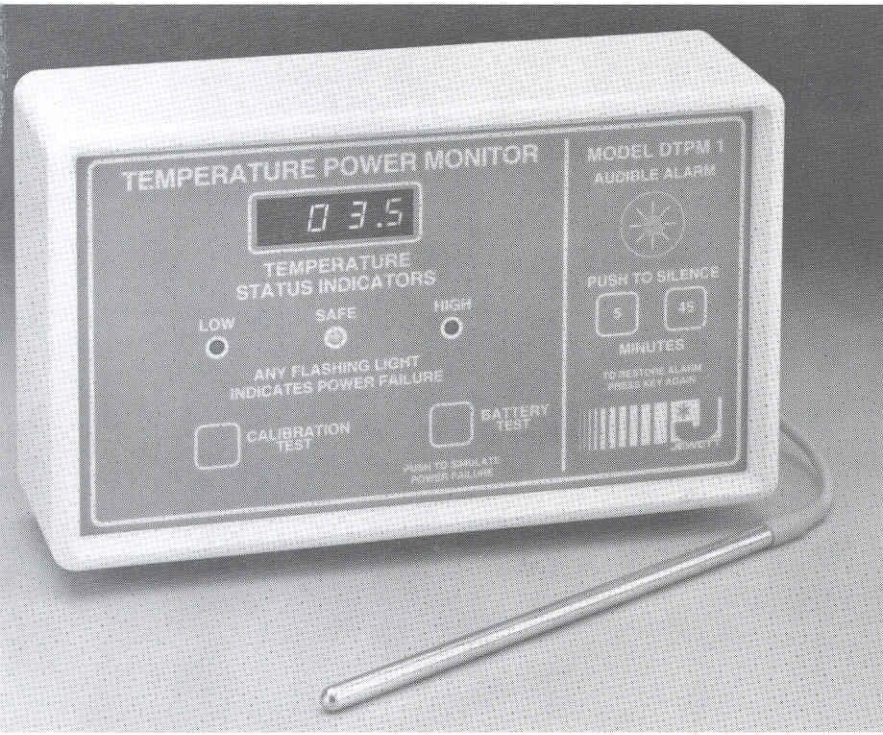
RECORDER CASE DIMENSIONS (inches shown, mm in parentheses)

Overall case size is 10-1/8 (257) wide x 12-1/8 (308) high x 4-31/32 (126) deep.



Jewett Digital Temperature Power Monitor

DTPM Series



PRF161-31

Installation and Operating Instructions

Jewett Digital Temperature Power Monitor DTPM Series

The Jewett Digital Temperature Power Monitor is designed to display temperature and to warn of temperature and power supply failures occuring in most controlled temperature applications. When an improper temperature is reached or the power supply is interrupted, the DTPM system provides a visual and audible signal. It is designed to provide a different visual and audible signal for each type of occurance. A chart describing these signals is included in this manual for location at the primary monitor installation. When a remote monitor is used, a copy of this chart should be kept at the remote location where 24 hour monitoring will take place.

The DTPM series monitors are equipped with a replaceable alkaline 9 volt battery. In the event of a power failure, the DTPM will continue to operate and monitor the problem for approximately 2 hours. Under normal conditions, the battery should be replaced annually or when the on/off audible signal is given for low battery.

The DTPM system comes standard with a feature that allows it to be connected to an existing remote powered station.

A remote location monitor, the DTPMR, is available optionally for those not wishing to connect the DTPM to their existing master remote station. In the event of a failure, the DTPMR will signal the same visual and audible signal warnings as those being displayed at the DTPM master station with exception of the digital display.

The DTPM is available in a wide range of temperature catagories with a single or dual setting maintaining an accuracy of $\pm$ .1° C. (See the Styles of DTPM Monitor Chart for further information.)

The DTPM system operates on standard 115-60-1 or 220-50/60-1 AC current.

Installation Instructions: DTPM Series

1. If the DTPM system is to be used with a Jewett Blood Bank Refrigerator, Plasma Freezer, or other Jewett product, locate the access hole and mounted bracket with solution bottle on the unit. (For other makes or models, it will be necessary to check with the equipment manufacturer to locate the proper area for installing an access hole so as not to damage your original equipment.)

2. Fill the solution bottle with the appropriate solution:

Blood Bank and other refrigerators — 10% Glycerin to water solution

Blood Plasma and other freezers — 50% Glycol to water solution

3. Assemble the quick disconnect plug to the temperature sensor by aligning the indicators provided on each section of the plug. This will complete the temperature sensing circuit.

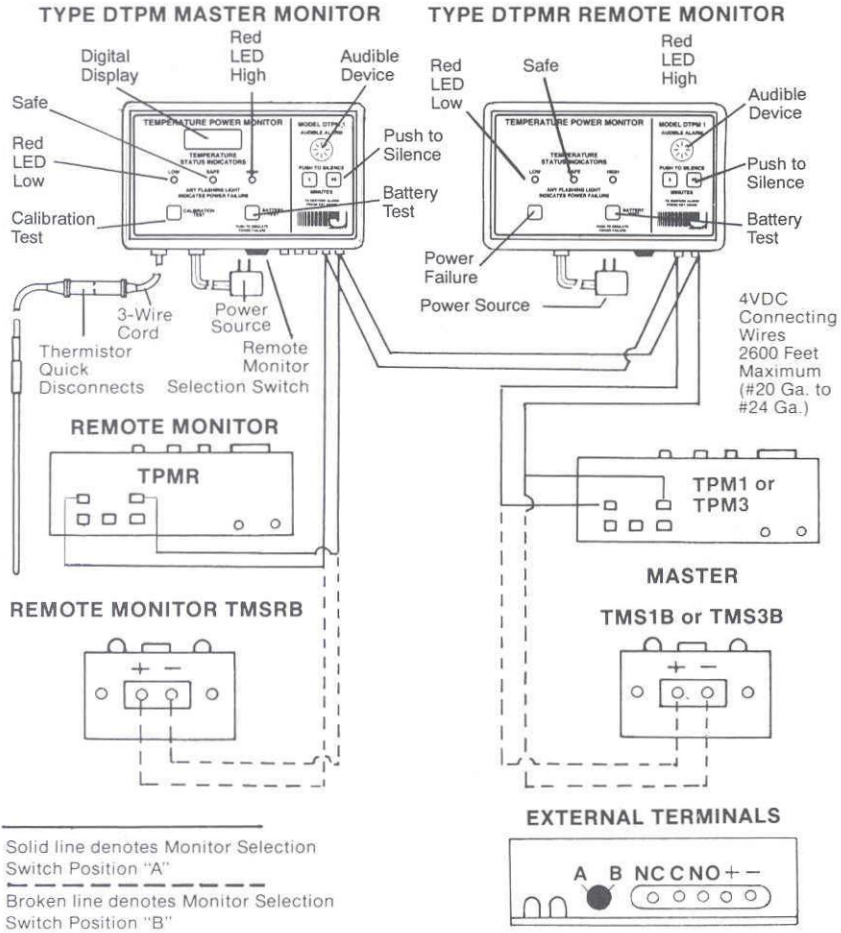
4. Insert the sensor through the access hole and position in the solution bottle. Seal the access hole with sealing compound. The top of the bottle should also be sealed to prevent solution evaporation.

5. Connect the 9 V. alkaline battery, located in the recess on the back of the monitor case, to the snap clip supplied and replace the battery into the recess. Now the monitor is ready for mounting to a wall type surface.

6. Connect the monitor to the same AC electrical outlet as the equipment being monitored so that if power failure occurs, the monitor will sound immediately using battery power.

7. A complete Quality Control Procedure should be performed on the equipment being monitored as well as the DTPM system prior to storage of product to insure proper operation. Training of personnel should also be initiated at this time. A suggested Quality Control Procedure is included in this manual.

Note: Always connect A/C power first, then the D/C (Battery).



CASE DIMENSIONS
DTPM Models Only

Height: 5" - 125mm
Width: 8¼" - 210mm
Depth: 2¾" - 70mm

USER-SUPPLIED REMOTE INTERFACE

Connect two-conductor wire from user's existing remote location with either normally open and common or normally closed and common terminals.

A. A single pole, double throw, normally open switch inside the monitor is connected to the exterior terminals.

B. The switch remains open when green LED is on and temperature in monitored space is within operating range.

C. Switch will close when red LED is on and green LED is off. This indicates the temperature in the monitored space has varied above or below operating range or power has failed.

Operation Data: DTPM Series (All Models)

1. Normal Operation — When the temperature is safe, AC power is normal, the back up battery power is normal, the digital display is on, the green safe LED is on and the audible signal is silent.

2. Temperature Failure — If an improper temperature occurs, the audible signal will sound, the green safe LED will go off and the red high or low LED will light.

3. Silence Timer Feature — When an improper condition occurs, the audible signal can be silenced by pressing either the 5 minute or 45 minute selection switch. If the temperature returns to a safe range, the silence period will automatically cancel the remaining time.

4. AC Power Failure — In the event of an AC power failure, the DTPM monitor will continue to monitor temperature on "Back up Battery Power". The digital display will extinguish, there will be a constant audible signal and the safe light will flash until an unsafe temperature is reached. Then the appropriate red light will flash and the audible signal will continue to sound.

The battery should be tested regularly by pushing the "Battery Test Switch". If the battery becomes weak, an on/off audible signal will come on without any changes in the other features. To insure battery backup power, the battery should be replaced annually.

5. Remote Monitor Selection Switch — The Jewett DTPM can be connected to a DTPMR/TPMR (Position "A") or TMSRB (Position "B"), by selecting the appropriate position for your application. Switch location is noted on the Installation Diagram in this manual.

Note: Maintain Polarity — Transmission Voltage is DC.

User-Supplied Remote Location Equipment Interface

Jewett DTPM Series Monitors are equipped with three external terminals which are the Common (C), Normally Open (NO), and the Normally Closed (NC) dry contacts of a hermetically sealed relay. This relay is energized when all conditions are safe and de-energized when any unsafe condition occurs. The current-carrying capability of this relay is 1 ampere at 115-60-1 VAC (resistive) or 1 ampere at 28 VDC (resistive). This feature permits the DTPM monitor to be connected to a master remote monitoring station that has its own source of power.

Jewett Remote Location Monitor Application: Model DTPMR

The optional Jewett Model DTPMR Remote Monitor permits the temperature and power monitoring functions performed by the master DTPM, TPM, TMSB, or T100 Module to be transmitted audibly and visually (no digital display) to a remote location. Transmission of data from the DTPM, TPM, TMSB or T100 Module, to the DPTMR is by two-conductor, low voltage (#24 to #20 gauge) wire that is easily connected to external terminals on each unit. Up to 2,600 feet of wire may be used between the master and remote units. Connection of two conductor wire between "H" (+) and "G" (-) terminals of DTPM and DTPMR remote is required. Maintain Polarity - Transmission voltage is DC.

Styles of DTPM Monitors

MODEL	DESCRIPTION	VOLTAGE
DTPM1000-1B DTPM1000-2A	Standard, (+) 1° C. to (+) 6° C. range. Sound on fall and rise.	115-60-1 220-50-1
DTPM1001-1B DTPM1001-2A	*Special*, (+) 1° C to (+) 10° C. range. Sounds on fall and rise.	115-60-1 220-50-1
DTPM3000-1B DTPM3000-2A	Standard, (-) 20° C. setting. Sounds on rise only.	115-60-1 220-50-1
DTPM3001-1B DTPM3001-2A	*Special*, (-) 10° C. setting. Sounds on rise only.	115-60-1 220-50-1
DTPMR-1B DTPMR-2A	Remote monitor for use with DTPM, TPM, TMSB Monitors, and T100 Modules	115-60-1 220-50-1

Additional special temperature settings can be provided upon request. Contact Jewett for model numbers and pricing.

Suggested Quality Control Test Procedure

Always check the low activation first:

1. Low Alarm Activation (DTPM1 +1.5° C.)
   a. Fill an 8 ounce glass half full of chilled water (+4° C.).
   b. Crush ice to 1/8″ particles in a separate container.
   c. Remove the thermistor probe from the solution bottle, tape or rubber band the probe to the test thermometer, (NBS certified) then insert into the glass. The thermistor sensor and the test thermometer must be at the same level.
   d. Slowly add crushed ice at the proper rate to provide a temperature drop of no more than 0.5° C. per minute.
   e. Stir the test thermometer and thermistor in a circular motion, keeping the ends in the lower liquid not the upper ice slurry.
   f. Log the lower alarm activation.
2. High Alarm Activation (DTPM1, +5.5° C, DTPM3, -20° C.
   a. 5.5° C. — Slowly add warm water to the ice slurry at the proper rate to provide a temperature rise of no more than 0.5° C. per minute.
   b. -20° C. — Slowly add warm water to a container of pre-cooled antifreeze solution (-30° C.) at the proper rate to provide a temperature rise of no more than 0.5° C. per minute.
   c. Stir the test thermometer and thermistor in a circular motion, keeping the ends in the lower liquid not in the upper ice slurry.
   d. Log the high alarm activation.
3. Check and log the reaction of the remote monitor during these test procedures if applicable.
4. Push the calibration check button for proper reading. Log results

   DTPM1 +10° C.
   DTPM3 -20° C.

5. Activate the battery test switch to check battery. Log results.
6. The rate of rise and fall of temperature used in testing is critical. Observe the 0.5° C. per minute rate of change or testing errors will occur.

Guide to the DTPM Warning System

Temperature Status Indicators (Visual) Low	Safe	High	Audible Alarm	Conditions of AC or Battery Power	Condition of Temperature
Off	On	Off	Silent	Normal	Safe
Off	Off	On	On	Normal	Above High Limit
On	Off	Off	On	Normal	Below Low Limit
Off	Flashing	Off	On	AC Failure	Safe
Off	Off	Flashing	On	AC Failure	Above High Limit
Flashing	Off	Off	On	AC Failure	Below Low Limit
Off	On	Off	Short On Short Off	Battery Low	Safe

Reset Instructions: To silence the audible signal, select the desired amount of time, 5 or 45 minutes), press the "Push to Silence" button. The red LED will stay on until the temperature returns to normal. When the proper temperature is reached, the red LED will go off and the green LED will come on. The audible signal is silent for the selected period of time and is automatically reactivated when an unsafe temperature condition occurs.

Remote Terminal Voltage DTPM 1 & 3

Switch Position "A"			Switch Position "B"		
High Alarm	5.34	VDC	High Alarm	0	VDC
Low Alarm	4.5	VDC	Low Alarm	0	VDC
Safe Alarm	4.8	VDC	Safe Alarm	5	VDC

Note: These values are as seen on a oscilliscope.

Guide to the DTPMR Warning System

(When connected to a DTPM, TPM or Self-Test T100 Module)

Temperature Status Indicators (Visual)			Power Failure (Visual)	Audible Alarm	Conditions of AC or Battery Power	Condition of Temp. at Master Monitor
Low	Safe	High				
Off	On	Off	Off	Silent	Normal	Safe
Off	Off	On	Off	Continuous	Normal	Above High Limit
On	Off	Off	Off	Continuous	Normal	Below Low Limit
Off	Flashing	Off	Flashing	Continuous	AC Failure at Master	Safe
Off	Off	Flashing	Flashing	Continuous	AC Failure at Master	Above High Limit
Flashing	Off	Off	Flashing	Continuous	AC Failure at Master	Below Low Limit
Off	On	Off	Off	Short On Short Off	Low Battery	Safe
Off	Off	Off	On	Continuous	Two-Wire Transmission Line Between Master & Remote is Broken/Shorted	

Reset Instructions: To silence the audible signal, select the desired amount of time, 5 or 45 minutes), press the "Push to Silence" button. The red LED will stay on until the temperature returns to normal. When the proper temperature is reached, the red LED will go off and the green LED will come on. The audible signal is silent for the selected period of time and is automatically reactivated when an unsafe temperature condition occurs.

Guide to the DTPMR Warning System

(When used with TMSB Monitor or T100 Module w/o Self-Test feature)

TEMPERATURE STATUS INDICATOR			POWER AND FAILURE VISUAL	AUDIBLE ALARM	CONDITION OF BATTERY POWER	CONDITION OF TEMP AT MASTER STATION
LOW	SAFE	HIGH				
OFF	ON	OFF	OFF	SILENT	NORMAL	SAFE
OFF	OFF	OFF	ON	CONTINUOUS	NORMAL	ABOVE HIGH LIMIT
OFF	OFF	OFF	ON	CONTINUOUS	NORMAL	BELOW LOW LIMIT
OFF	OFF	OFF	ON	CONTINUOUS	AC FAILURE AT MASTER	SAFE
OFF	OFF	OFF	ON	CONTINUOUS	AC FAILURE AT MASTER	ABOVE HIGH LIMIT
OFF	OFF	OFF	ON	CONTINUOUS	AC FAILURE AT MASTER	BELOW LOW LIMIT
OFF	ON	OFF	ON	SHORT ON SHORT OFF	LOW BATTERY AT MASTER	SAFE
OFF	SHORT ON AND OFF	OFF	OFF	CONTINUOUS	AC FAILURE AT REMOTE	SAFE
OFF	ON	OFF	OFF	SHORT ON SHORT OFF	LOW BATTERY AT REMOTE	SAFE
OFF	OFF	OFF	SHORT ON SHORT OFF	CONTINUOUS	AC FAILURE AT REMOTE	FAILURE
OFF	OFF	OFF	ON	CONTINUOUS	TRANSMISSION LINE FAILURE	

Replacement Parts List (DTPM Series Only)

Part Number	Description
MON-D0015	Main Board for DTPM1
MON-D0016	Main Board for DTPM3
MON-D0017	Main Board for DTPMR
MOD-D0008	Thermistor Sensor
MOD-D0009	Thermistor Cable
MON-D0004	Transformer 115/10VAC
MON-D0005	Transformer 220/10VAC
	Alkaline 9 volt Battery available at Retail Outlets.

Jewett International Warranty

Jewett International Corporation warrants each new piece of equipment manufactured by us, to be free from defects in material and workmanship under normal use and service for one year.

If any part of said equipment should show any defects in materials or workmanship within one year of installation by the original purchaser, we will be pleased to repair or replace such defective parts subject to the following conditions:

1. Installation must be made within 90 days from date of shipment by The Jewett Refrigerator Company, Inc., to original purchaser. (Warranty card must be returned immediately after installation.)

2. The defective part shall be returned to us with transportation charges prepaid and the repaired or replaced part will be returned F.O.B. our factory.

3. Warranty does not include any labor charges for removal or replacement of defective parts or refrigerant.

4. This warranty will not apply to any equipment which has been repaired or altered outside of our factory without our specific authorization.

5. This warranty does not cover any loss of stored products.

6. This warranty superedes all other warranties expressed or implied, and we neither assume nor authorize any other person to assume for us other liability in connection with the sale of our products.

Warranty

For a period of two (2) years, Jewett will supply at no charge, including freight, any replacement part that fails due to defects in material or workmanship under normal use (excluding products sold outside the 48 contiguous states on which our one-year warranty on parts and workmanship applies). Inspection of defective parts by Jewett will be final in determining warranty status. Defective parts must be returned, prepaid, with return authorization number to Jewett.

For a period on one (1) year, Jewett will pay labor charges (including freight) and the cost of supplies necessary to perform authorized repairs to Jewett products. Repair service must be performed be a recommended Jewett Service Agency. All service must be authorized by Jewett prior to performance of same to be covered by this warranty:

The following conditions apply:

1. Jewett's warranty becomes effective two (2) weeks after shipment from our factory. This allows adequate shipping time so that commencement of the warranty coincides with delivery of your new equipment.
2. This warranty does not apply to products damaged in transit or by accident, fire, flood, acts of God, unauthorized alteration, repair or improper installation. Jewett's warranties shall not be effective or actionable unless the equipment is used in accordance with all accompanying warnings and directions.
3. Jewett shall not be liable for any loss of stored material.
4. This warranty supersedes all other warranties, expressed or implied. JEWETT OFFERS NO WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE REGARDING GOODS SOLD. No agent, employee or representative of The Jewett Refrigerator Company, Inc. may bind Jewett to any warranty concerning equipment sold in addition to the warranty set forth above. Any warranty, affirmation or presentation beyond the above terms and conditions shall be non-enforceable.

Please call 1-800-879-7767 to notify Jewett of problems during the warranty period. To identify the product, please supply:

1. Model Number
2. Serial Number (Located on back of Monitor)
3. Full description of problem
4. Location of product

Questions regarding operation, maintenance or product service may also be directed to the above toll-free number.

JEWETT

The Jewett Refrigerator Co., Inc.
Jewett International Corporation
750 Grant Street,
Buffalo, NY 14213-1000

Phone: 1-800-879-7767 • In NY: (716) 881-0030
Fax: (716) 881-6092 •

DTPM MP 1/97

Printed in U.S.A.

1/98

N.S.N.: 4110-01-450-0060

MODEL CTF1-1B-06

BLOOD PLASMA FREEZER WITH DUAL VOLTAGE/CYCLE TRANSFORMER & RECORDING THERMOMETER

Installation, Operation and Service Manual

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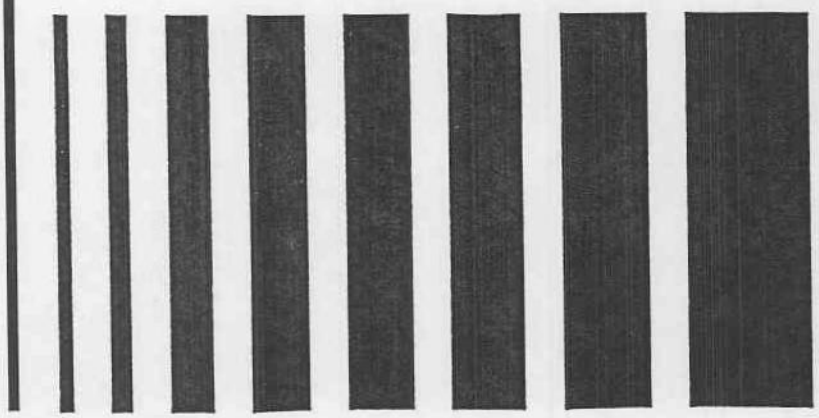


JEWETT

DATA ITEM # DPSC-B

A006

THE JEWETT REFRIGERATOR COMPANY, INC.
BUFFALO, NEW YORK 14213-1000

BLOOD PLASMA FREEZERS

This Jewett Product is a complete packaged unit ready to operate when plugged into an electrical source. It is not necessary to have a refrigeration serviceman set the unit in operation. The unit has been tested prior to shipment. Read all the instructions before proceeding with installation.

INSPECTION FOR DAMAGE

Uncrate the product and remove all packing and crating materials. Inspect the product and parts thoroughly for damage or missing parts. File all claims for damage with the transportation company immediately. Do not file claims with the manufacturer.

MAINTENANCE INSTRUCTIONS

1. Frequent cleaning of the interior and exterior with water and a good fungicidal detergent that eliminates harmful bacteria, stains and other foreign matter, will keep the unit fresh and new looking.

2. Shelves and/or drawers should be removed from the cabinet and thoroughly scrubbed. Clean door gasket periodically.

3. The unit cooler fan operates continuously when the door is closed and requires no lubrication.

4. The condensing unit needs no oil or other lubrication. The finned condenser can become clogged with lint or dust. The openings between the fins should be kept clean. A vacuum cleaner or small test tube brush works well for this purpose. This should be accomplished on an annual basis. Failure to keep the condenser fins free of dirt and lint will result in erratic operation and may damage the refrigeration system.

5. Annual inspection of the mechanical refrigeration equipment by a qualified serviceman is recommended. A qualified mechanic can frequently make adjustments that will prevent future breakdown.

6. The refrigeration system is charged with refrigerant R404a. If the system is opened for any reason, extreme care should be taken to prevent the entry of moisture-bearing air. A new drier should be installed in the lines when the system is closed.

INSTALLATION INSTRUCTIONS

MODEL CTF1-1B-06

1. The cabinet will pass through a standard 30" door opening.

2. Inspect the interior, exterior and mechanical equipment for special instruction tags fastened at various points.

3. Move the freezer into the desired location. Make sure the bottom of the freezer is evenly supported. Thin shims under the points of rest can be used to equalize the distribution of weight. If the cabinet sets on an uneven floor, a slight rocking or vibration might result when the condensing unit is set in operation.

4. Make certain the freezer is located so the grill panel is unobstructed.

5. An automatic condensate evaporator eliminates the necessity for a floor drain. For proper elimination of condensation, wafers should be placed in the condensate tray located in the rear of the mechanical compartment in accordance with the instructions packed with the wafers.

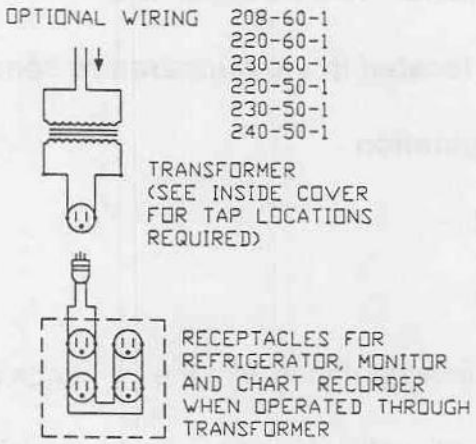
6. The condensing unit is shipped with all service valves open and ready for operation. Do not adjust the refrigerant valves or the temperature control.

7. **For 115 VAC 60 cycle 1 phase operation:**
Provide (3) 3 wire grounding type convenience outlets within 6 feet of freezer. Connect the cord with plug tagged 115 VAC 60 cycle 1 phase into the wall outlet. Connect the Model DTPM3000-1B Temperature Monitor and Model 8ER-1B Recording Thermometer to the other 2 convenience outlets.

For 208/240 VAC 50/60 cycle 1 phase operation:
Provide (1) 3 wire grounding type convenience outlet within 6 feet of freezer. Before connecting the cord to the wall, select the appropriate connection inside the transformer.

	Primary Volts		**Secondary Volts**	
Tap Connection	***50 Hz.***	***60 Hz.***	***50 Hz.***	***60 Hz.***
High	230 -250	253 - 283	105	115
Medium	210 - 239	230 - 260		
Low	189 - 217	208 - 236		

Connect the cord with plug tagged 208/240 VAC 50/60 cycle 1 phase into the outlet. Connect the cord with plug tagged 115/60/1 into one of the outlets located on the back of the freezer. Connect the Model DTPM3000-1B Temperature Monitor and Model 8ER-1B Recording Thermometer into the other available outlets.



Note: Use of electrical characteristics, other than those specified on the serial plate will cause permanent damage to the mechanism. The serial plate is located inside the freezer at the top of the right hand wall.

8. Operate the freezer for several hours to allow the unit to reach normal operating temperatures before storing product.

NOTE: Erratic operation on initial start-up does not indicate a faulty control. When normal operating temperature is reached, the condensing unit will cycle regularly.

SEQUENCE OF OPERATION

The ***Temperature Control Switch*** controls current to the motor compressor and unit cooler fan motor. The ***Defrost Switch*** controls current to the defrost heater.

NOTE: Both switches are located in the temperature control/defrost timer.

STEP "1": Normal Refrigeration Operation

1. The fan delay control is closed.
2. The defrost heater is off.
3. The condensing unit operates in accordance with the demands of the refrigeration system.
4. The unit cooler fan operates continually. However, the door switch will deactivate the fan motor when the door is opened.
5. Frost builds up slowly on the unit cooler.

STEP "2": - Defrost Cycle

1. The unit cooler defrost cycle is started automatically by the timer at predetermined times.
2. The timer opens the temperature control switch which breaks the circuit to the motor compressor and unit cooler fan motor thereby shutting them off; and closes the defrost switch, thereby permitting current to flow to the heater.
3. The heater, recessed in slots, gives up heat directly to the fins of the unit cooler. This heat raises unit cooler and refrigerant temperature to 32° F. and causes the frost to melt.
4. Frost on the unit cooler is melted and defrost water drips into the heated drain pan and flows down the drain.
5. When frost has completely melted from the unit cooler, the cooler starts to warm up beyond 32° F.

STEP "3": - Unit Cooler Re-Cooling Cycle

1. When the unit cooler warms up to 55° F. the defrost termination control closes. The timer switches back to its normal position (Temperature Control Switch closed, Defrost Switch open). The fan delay control is now open. The heater safety control may open, but under normal operation will remain closed.

The heater safety thermostat would open only if the defrost termination fails.

2. The compressor starts.

3. The unit cooler fan motor remains OFF, so that warm air will not enter the refrigerated space.

4. The evaporator coil cools down approaching operating temperatures.

STEP "4": - Return to Normal Operation

1. When the coil temperature reaches 16° F. (-8.9° C.), the fan control switch closes. Current flows to the fan motor and the unit returns to normal operation.

CTL040 TEMPERATURE CONTROL/DEFROST TIMER SETTINGS

Setpoint Dial	1
Differential Dial	2
Termination Time	20
Termination Temperature	7 - 10
Dip Switches (Every 8 Hours)	# 1, # 2 & # 4 Up - # 3 Down
J2 Jumper (Electric)	"N"

TEMPERATURE CONTROL/DEFROST TIMER INSTRUCTIONS - CTL040

OPERATION

The CTL040 incorporates the latest in solid state electronics providing the functions of refrigeration temperature and defrost control in a single compact controller. The temperature control function precisely senses refrigerated space temperature. It cycles the compressor or solenoid valve to provide +1° F. accurate temperature control under all conditions of ambient temperature. When a defrost is initiated, the temperature contacts open to shut off the compressor (in hot gas mode they close to operate the compressor during defrost). When defrost terminates, the temperature control contacts are allowed to close to turn on the compressor. The defrost timer function initiates defrost at selectable time intervals rather than on a time of day basis. At the end of the time interval, the switch closes, energizing electric defrost heaters (or hot gas solenoid valve). Simultaneously, the temperature control switch opens (closes in hot gas mode). At termination from either time, temperature or remote source, the defrost switch opens the defrost heater or hot gas solenoid circuit and the temperature control is allowed to close, restarting refrigeration. Defrost duration is controlled by an adjustable duration timer. It automatically terminates the defrost or acts as a back up termination if temperature of remote termination is used. Adjustable temperature termination is built in and may be used by the addition of a sensor placed on the evaporator.

SET POINT DIAL

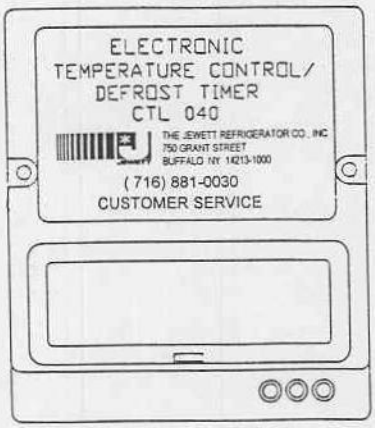
Turning the dial knob changes the "cut-in" and "cut-out" setting, clockwise for warmer, counter-clockwise for colder. The set point may be fixed by using a fixed resistor on the remote set point terminals and moving the J3 jumper the "EX".

DIFFERENTIAL DIAL

Turning the dial knob changes the "cut-in" only, the "cut-out" remains the same. Turn the dial knob clockwise for wider differential and counter-clockwise for narrower differential.

ELECTRIC/HOT GAS JUMPER

Defrost mode may be selected by moving the J2 jumper to "N" for normal electric defrost or "HG" for hot gas defrost.



COVER

SR2622

TIME TERMINATION DIAL

The defrost duration timer starts when a defrost initiates and will automatically terminate the defrost when the time set on the dial expires. If any of the temperature termination methods are used, the time termination will override them and terminate the defrost.

TEMPERATURE TERMINATION DIAL

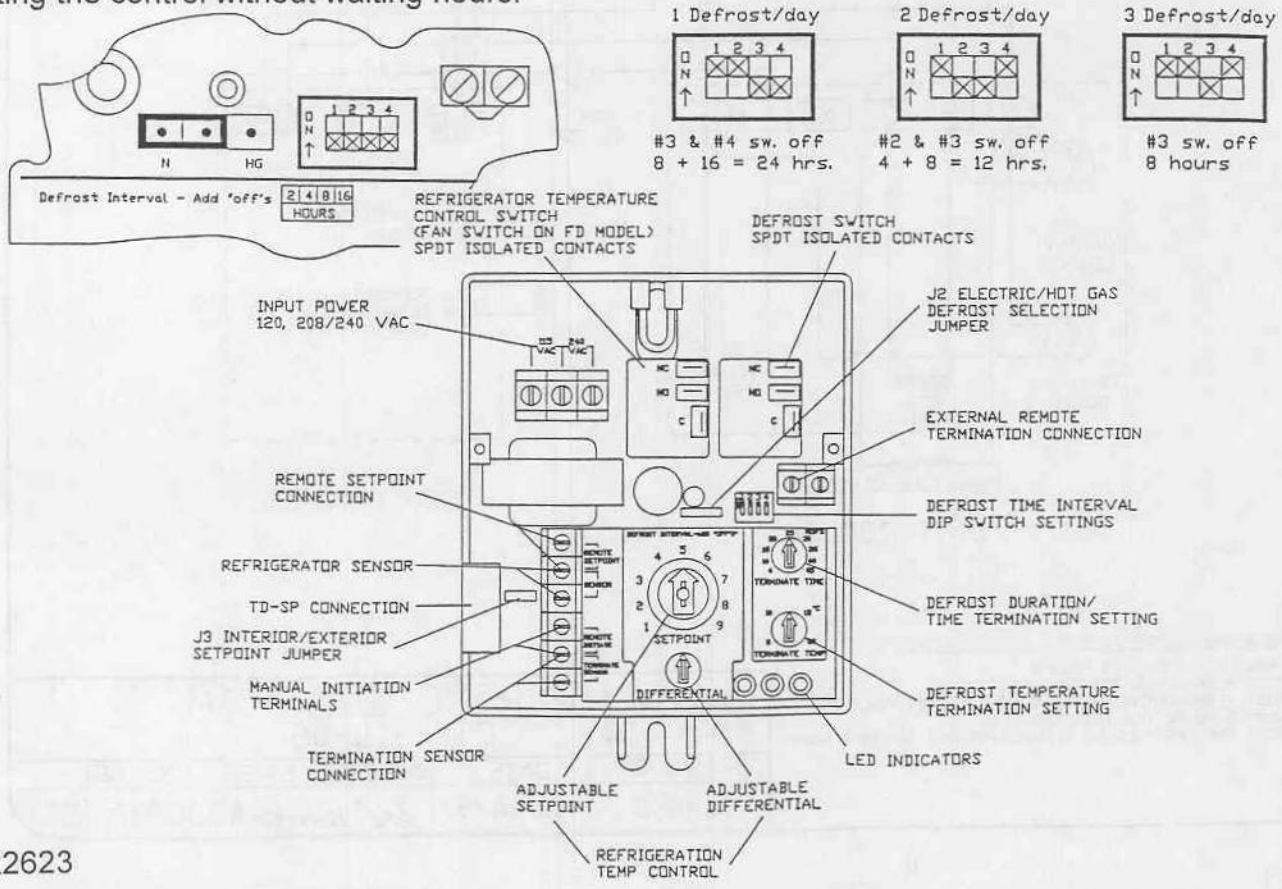
The termination set point dial may only be enabled through the utilization of a termination temperature sensor. When the temperature at the sensor rises to the termination setting, the defrost is automatically terminated.

MANUAL INITIATION

Many users require a means of initiating a defrost at other than the scheduled time due to unusual conditions. Remote initiate terminals are provided to allow initiation by simply shorting across them. Manual termination may also be accomplished by momentarily shorting across the terminate sensor terminals.

DEFROST INTERVALS

Set defrost timer interval on DIP switch adjacent to "Terminate Time" dial. Each switch adds it's numerical value to the interval between defrosts when it is in the off position. Switch 1 adds 2 hours, switch 2 adds 4 hours, switch 3 adds 8 hours and switch 4 adds 16 hours. The 4 switches provide 16 combinations establishing choices of defrost intervals from 2 to 30 hours in 2 hour increments. With all switches "ON", interval is approximately 4 minutes, providing a means for testing the control without waiting hours.



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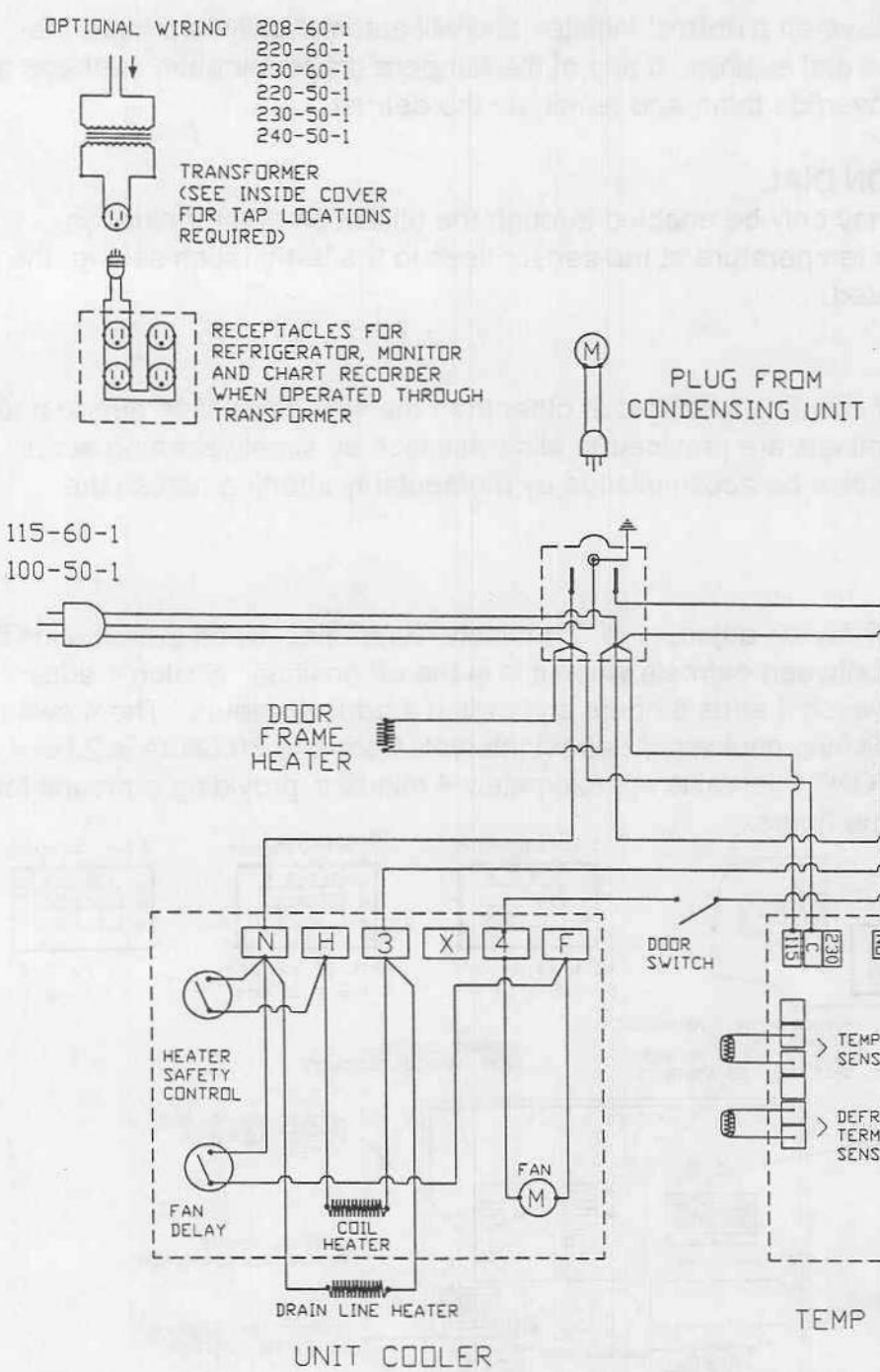


TEMPERATURE CONTROL/DEFROST TIMER SETTINGS

TEMPERATURE, -28.0°C TO -32.0°C
DEFROST TERMINATION TEMPERATURE 7.5°C
DEFROST TERMINATION TIME BETWEEN 20 TO 24 MINUTES
J2 JUMPER TO "N" FOR ELECTRIC DEFROST
DEFROST DIP SWITCHES TO 3 TIMES PER DAY EVERY 8 HOURS

WIRING DIAGRAM CTF1-1B-06				
DRAWN BY	DATE	CHECKED BY	DRAWING NO.	
ZELASKO	12/16/97	12-16-97	A300216	01

A300216-01

REPLACEMENT PARTS LIST

MODEL: CTF1-1B-06 BLOOD PLASMA FREEZER

New Part Number	Old Part Number	Description
CND261	M4YL-0035-IAA-140	"Copeland" Condensing Unit, R404A, 115/60/1
RSK2086	AS13CIE-IAA	Motor Compressor
RSK6033	050-C012-02	Fan Motor
FNB030	083-0122-00	Fan Blade
RSK4055	071-C100-38	Overload
RSK5065	040-C411-83	Start Relay
RSK1050	014-0038-04	Start Capacitor
COL009	TL09AF	"Bohn" Unit Cooler, 115/60/1
MTR029	25300701	Fan Motor
FNB001	5101-B	Fan Blade
FNB015	5054-D	Fan Guard
HTR016	72102001	Electric Defrost Heater Element
CTL046	20640L15-137-D56	Fan Delay Thermostat
ACM001	050503-02	"Parker" Accumulator
CTL040	SP-32DT	"Independent Energy" Electronic Temp. Control
DIR007	032092-00	"Parker" Filter Drier
EVP001	1800	Condensate Evaporator
EVP002	1800-W	Condensate Wafers for EVP001
HTR012	SR1680-84.5	"Lyall" Door Heater Cable
HTR107	H-25	"Heaters Inc." Drain Line Heater, 22 Watt
SWT014	780021	"Littlefuse" Door Switch (Normally Open)
HGS005	R42-2842	"Component" Hinge 1 1/8" Offset
FSK022	R35-1105-XC	"Component" Fastener & Strike with Lock
GKT055	SN-39	Magnetic Door Gasket 20 1/8" X 20 1/8"
B200555H01	B200555H01	8 oz Plastic Bottle Bracket
BTL001	BTL001	8 oz Plastic Bottle
TFR002	T60814	"Acme" Transformer
D201036H02	D201036H02	Kickplate & Grill

HINGE ADJUSTMENT

HINGE ADJUSTMENT

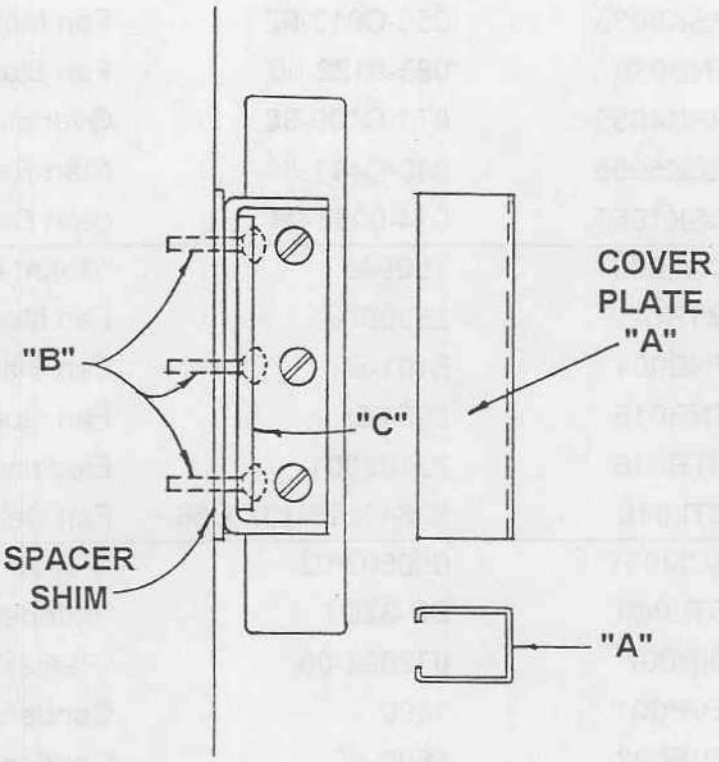
A. Remove exterior hinge cover plate by opening refrigerator door. Place screwdriver under interior portion of cover, gently pry cover outward. Pull straight out. Close door.

B. Loosen the three (3) screws "B" which hold adjusting plate "C" in position.

C. To tighten gasket seal, place hand against exterior of door near hinges, gently press in on door so gasket sits firmly against cabinet face. Tighten screws "B".

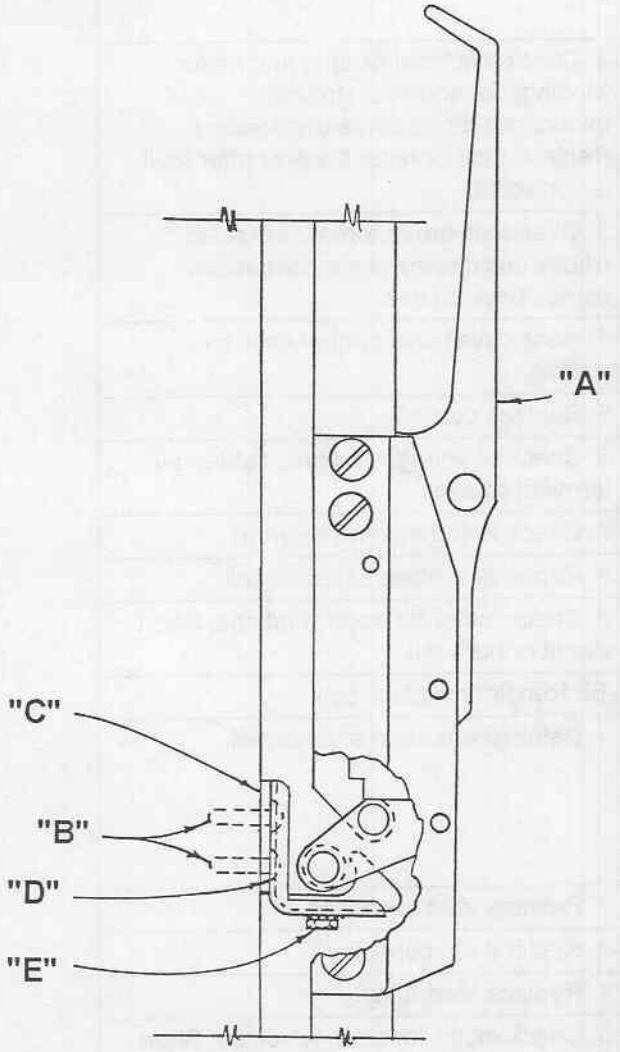
D. When adjustment is complete, if hinges are adjusted so gasket seal is too tight, door will tend to spring open. Door must be readjusted. To test gasket seal - insert a dollar bill (or piece of paper of similar size) between the gasket and cabinet opening; close door - a slight resistance to removal of the dollar bill (test strip) should be felt - check perimeter of door. If door latch is loose, see latch adjusting information SR915-B.

E. Replace cover plate "A".



NOTE: *To accomplish different offsets, shims are utilized. If replacing hinges, make sure to reuse any shims furnished on cabinet.*

LATCH ADJUSTMENT



LATCH & STRIKE ADJUSTMENT

A. Latch as fastened to door.

B. For up or down adjustment (proper latch engagement), loosen mounting screws"B".

C. Strike plate "C" remains in position.

D. Move strike "D" up or down as required and tighten screws "B" when adjustment is satisfactory. No play will be present in latch handle with door closed.

E. For in and out adjustment (proper gasket seal), loosen screw "E". Adjust in or out as required and tighten screw when adjustment is satisfactory.

NOTE: *This stainless steel hex head cap screw is 10/32 X 5/16 long, or use Jewett part number BLT03C02A006. Use box wrench, open end wrench, or ratchet to tighten. Do not use a nut driver or pliers.*

NOTE: *If replacing latch and strike assembly, make sure to reuse any shims furnished on cabinet.*

TROUBLE SHOOTING SERVICE CHART

	SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
A	Compressor will not start, no hum	1. Line disconnect switch open.	1. Close disconnect switch
		2. Fuse blown or breaker tripped.	2. Check electrical circuits and motor windings for shorts or grounds. Investigate for possible overloading. Replace fuse or reset breaker after fault is corrected.
		3. Thermal overload tripped.	3. Overloads are automatically reset. Check unit closely when compressor comes back on line.
		4. No cooling required	4. None. Wait until control calls for cooling.
		5. Control contacts stuck in open position.	5. Replace control.
		6. Loose wiring.	6. Check all wiring junctions, tighten all terminal screws.
		7. Improper wiring	7. Check wiring against diagram.
		8. Liquid line solenoid valve will not open.	8. Repair or replace solenoid coil
		9. Motor electrical trouble.	9. Check motor for open windings, Short circuit or burn out.
		10. Liquid line solenoid will not open.	10. Repair or replace coil.
B	Compressor will not start, hums but trips on thermal overload.	1. Low voltage to unit.	1. Determine reason and correct.
		2. Start capacitor failure or wrong.	2. Replace start capacitor.
		3. Run capacitor failure or wrong.	3. Replace run capacitor.
		4. Start relay failure or wrong.	4. Replace start relay.
		5. Motor electrical trouble.	5. Check motor for open windings, Short circuit or burn out.
		6. Internal mechanical trouble in compressor.	6. Replace compressor.
		7. Improper wiring	7. Check wiring against diagram.
		8. Excessively high discharge pressure.	8. See high discharge pressure symptom.
C	Compressor starts, but does not switch off of start winding.	1. Low voltage to unit.	1. Determine reason and correct.
		2. Run capacitor failure or wrong.	2. Replace run capacitor.
		3. Start capacitor failure or wrong.	3. Replace start capacitor.

TROUBLE SHOOTING SERVICE CHART

SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
	4. Start relay failure or wrong.	4. Replace start relay.
	5. Motor electrical trouble.	5. Check motor for open windings, Short circuit or burn out.
	6. Internal mechanical trouble in compressor.	6. Replace compressor.
	7. Improper wiring.	7. Check wiring against diagram.
	8. Excessively high discharge pressure.	8. See high discharge pressure symptom.
D Compressor starts and runs, but short cycles on overload protector.	1. Excessively high discharge pressure.	1. See high discharge pressure symptom.
	2. Low voltage to unit.	2. Determine reason and correct.
	3. High voltage to unit.	3. Determine reason and correct.
	4. Thermal overload protector defective.	4. Check current, Replace protector.
	5. Run capacitor failure or wrong.	5. Replace run capacitor.
	6. Motor electrical trouble.	6. Check motor for open windings, Short circuit or burn out.
	7. Improper wiring causing additional current to pass through overload protector.	7. Check wiring diagram. Check for added fan motors, heaters, etc., connected to wrong side of protector.
E Compressor starts and runs, but short cycles on temperature or pressure controls.	1. Differential set too close.	1. Widen differential.
	2. High discharge pressure.	2. See high discharge pressure symptom.
	3. Low discharge pressure.	1. See low discharge pressure symptom.
F Compressor runs long or continuously.	1. Shortage of refrigerant.	1. Leak check and repair.
	2. Control contacts stuck or frozen.	2. Clean contacts or replace control.
	3. Refrigerated air space has an excessive load.	3. Determine reason and correct.
	4. Dirty Condenser	4. Clean condenser.
	5. Evaporator coil iced.	5. Defrost and check defrost circuit.
	6. Restriction in refrigeration system.	6. Determine location and remove.
	7. Evaporator fan motors not running.	7. Determine reason and correct. Check door switch.

TROUBLE SHOOTING SERVICE CHART

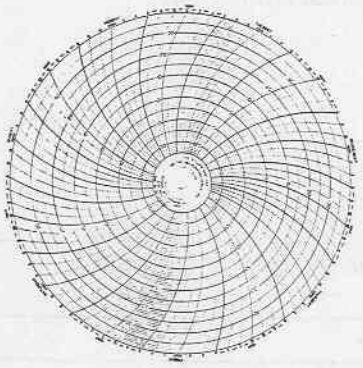
SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
Compressor noisy or vibrating.	1. Flooding of refrigerant into crankcase.	1. Check expansion device and refrigerant charge.
	2. Improper piping support.	2. Relocate tubing or add hangers.
	3. Worn compressor.	3. Replace compressor.
	4. Loose parts or mounting.	4. Find and tighten.
	5. Condenser fan blade loose or impeded.	5. Check and repair.
High Discharge pressure.	1. Non-condensables in system.	1. Remove the non-condesables.
	2. System overcharged with refrigerant.	2. Correct the charge.
	3. Discharge shutoff valve partially closed.	3. Open valve.
	4. Condenser fans not running.	4. Check electrical circuit.
	5. Dirty condenser.	5. Clean.
Low discharge pressure.	1. Suction shutoff valve partially closed.	1. open valve.
	2. Insufficient refrigerant in system.	2. Check for leaks. Repair and add charge.
	3. Low suction pressure.	3. See low suction pressure symptom.
High suction pressure.	1. Excessive load.	1. Reduce load or add additional equipment.
	2. Expansion valve overfeeding.	2. Check remote bulb. Adjust superheat.
Low suction pressure.	1. Insufficient refrigerant in system.	1. Check for leaks. Repair and add charge.
	2. Restriction in refrigeration system. Most notably the liquid line filter drier or capillary.	2. Determine location and remove.
	3. Expansion valve malfunctioning.	3. Check and reset for proper superheat.
Suction line frosted or sweating.	1. Expansion valve passing excess refrigerant or is oversized.	1. Readjust valve or replace with smaller valve.
	2. Expansion valve stuck open.	2. Clean valve of foreign particles, and replace if necessary.
	3. Evaporator fan motors not running.	3. Determine reason and correct. Check door switch.

TROUBLE SHOOTING SERVICE CHART

	SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
		4. System overcharged with refrigerant.	4. Correct the charge.
M	Liquid line frosted or sweating	1. Restriction in liquid line filter drier.	1. Determine location and remove.
		2. Liquid line shutoff valve partially closed.	2. Open valve.
N	Ice accumulating on ceiling around evaporator and/or on fan guards or blades.	1. Defrost duration too long.	1.Adjust defrost termination.
		2. Fan delay not delaying fans after defrost period.	2. Defective fan delay thermostat. Replace.
		3. Defective timer.	3. Replace.
		4. Too many defrost cycles per day.	4. Adjust timer for less defrost cycles.
O	Evaporator coil not clearing of frost during defrost cycle.	1. Coil temperature not getting above freezing point during defrost.	1. Check heater operation, or hot gas solenoid valve.
		2. Not enough defrost cycles per day.	2. Adjust timer for more defrost cycles.
		3. Defrost cycle too short.	3. Adjust timer for longer defrost cycle.
		4. Poor door seal.	4. Adjust door latch, install new gasket.
		5. Defective timer or defrost thermostat.	5. Replace defective component.
P	Ice accumulating in drain pan.	1. Defective heater.	1. Replace heater.
		2.Unit not pitched properly.	2. Check and adjust if necessary.
		3. Drain line plugged.	3. Clean drain line.
		4. Defective drain line heater.	4. Replace heater.
		5. Poor contact between drain pan and heater element.	5. Repair.
		6. Defective timer or defrost thermostat.	6. Replace defective component.

NOTE: Jewett Refrigerators and Freezers are designed to operate in areas that are heated to 60^0 F (15.6^0 C). Installation in unheated areas may require a low temperature compressor protection kit for satisfactory operation.

OPTIONAL ACCESSORIES



Temperature Recording Charts

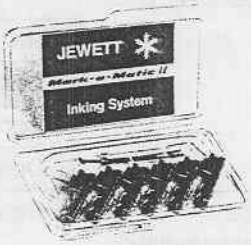
52 eight inch centigrade recording charts engineered and printed to form an essentially calibrated part of your temperature records.

Additional Charts

RDR020 - (-40° C. to +25° C.)

Mark-a-Matic II Continuous Flow Inking System - RDR024

The Mark-a-Matic II features disposable, fiber-tipped cartridge pens that eliminate messy refills and provide up to 8 months of fine line temperature recording.



Additional Ink

RDR024 - 6 Pen Set

TO ORDER IN THE U.S.A. OR CANADA CALL 1-800-879-7767

5-2-1 WARRANTY

The Jewett Refrigerator Co., Inc. is committed to supplying its customers with products of the highest quality. Jewett ensures product performance by offering the following warranty on each new piece of equipment it manufactures (excluding products sold outside the 48 contiguous states, international sales and Polarstar Compact Refrigerators and Freezers for which our one year warranty on parts and workmanship applies).

For a period of five **(5)** years Jewett will replace the refrigeration motor compressor if it is determined to be defective. This component will be supplied at no charge, including freight. Jewett will not be liable for installation, refrigerant or miscellaneous charges required to install the motor compressor beyond the first year after equipment delivery.

For a period of two **(2)** years, Jewett will supply at no charge, including freight, any replacement part that fails due to defects in material or workmanship under normal use. Inspection of defective parts by Jewett will be final in determining warranty status. Defective parts must be returned, prepaid, with return authorization number to Jewett.

For a period of one **(1)** year Jewett will pay labor charges (including travel) and the cost of refrigerant and supplies necessary to perform authorized repairs to Jewett products within the 48 contiguous United States. repair service must be performed by a recommended Jewett Service Agency. All service must be authorized by Jewett prior to performance of same to be covered by this warranty.

The following conditions apply:

I. Jewett's warranty becomes effective two (2) weeks after shipment from our factory. This allows adequate shipping time so that commencement of the warranty coincides with delivery of your new equipment.

II. This warranty does not apply to products damaged in transit or by accident, fire, flood, acts of God, unauthorized alteration, repair or improper installation. Jewett's warranties shall not be effective or actionable unless the equipment is used in accordance with all accompanying warnings and directions.

III. Jewett shall not be liable for loss of stored product.

IV. All service calls must be authorized by Jewett prior to performance of same. If repeat calls are required, each must be authorized by Jewett prior to performance of same. Jewett retains the right to replace any product in lieu of servicing it in the field.

V. This warranty supersedes all other warranties, expressed or implied. Jewett offers no warranty of merchantability or fitness for a particular purpose regarding goods sold. No agent, employee or representative of the Jewett Refrigerator Co., Inc. may bind Jewett to any warranty concerning equipment sold in addition to the warranty set forth above. Any warranty, affirmation or representation beyond the above terms and conditions shall be non-enforceable.

Please call 1-800-879-7767 to notify Jewett of problems during the warranty period. To identify the product, please supply:

1. Model Number
2. Serial Number
3. Full Description of Problem
4. Location of Product

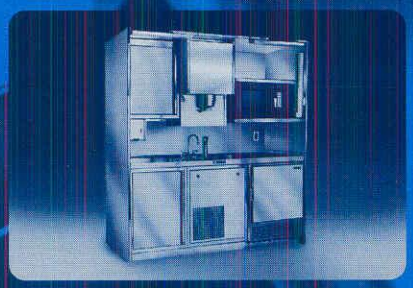
The name of the designated Jewett Service Agency will be supplied. Questions regarding operation, maintenance or product service may also be directed to the above toll-free number.

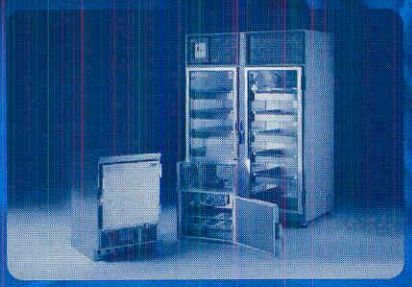
SR2635

11700/JEV
BuyLine 0120

JEWETT

HOSPITAL & LABORATORY EQUIPMENT





Morgue & Autopsy Equipment

Autopsy Tables

Dissecting Sinks

Anatomy Equipment

Morgue Refrigerators

Modular Work Stations

Nourishment Stations

Medicine Stations

Surgical Scrub Sinks

Blood Storage Products

Blood Bank Refrigerators

Blood Plasma Freezers

Red Cell Freezers

Laboratory Refrigeration Products

Laboratory and Biological Refrigerators and Freezers

-85°C Ultra-Low Temperature Freezers

Polarstar Economy Refrigerators

11700/JEV

Autopsy Tables and Dissecting Sinks

All Jewett Autopsy Tables and Dissecting Sinks feature seamless welded stainless steel construction with large radius inside corners. Dissecting sinks and tables with integrated sinks include all plumbing, hot and cold water control valves, lever handle waste, wrist-operated valves and swivel gooseneck spout, 6-inch wide (15cm) body supports and Teflon® headrests.

MODEL D - Deluxe Autopsy Table

- Features hydro-aspirator with built-in vacuum breaker for both suction and flushing and transparent rinse hose.

MODEL DV - Ventilated Autopsy Table

- Identical to Model D with built-in, double-cone ventilator to draw out tabletop air and odors while allowing liquids to pass through drain.
- Exhaust connection can be connected to six-inch (152mm) duct leading to ventilator fan, by others.

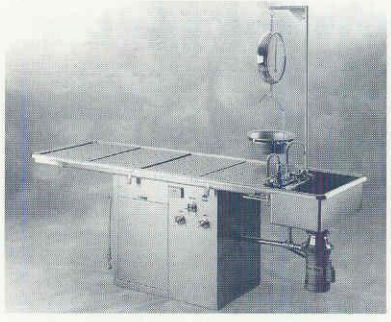
Model DV

MODEL DP - Pedestal Autopsy Table

- Basic Model D with pedestal support to enhance appearance, cleaning, and conceal plumbing (easily reached through access panels in pedestal).

MODEL DPV - Deluxe Pedestal-Ventilated Autopsy Table

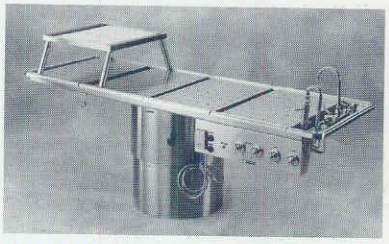
- Single-pedestal, fixed-height, ventilated deluxe model.
- Water-drained ventilator serviced through pedestal.



Model DPV with optional perforated body supports (Model SR2711-18S), waste disposer (Model SR1091) and autopsy scale (Model SR601-1315)

Model DEM - Dyna-Poise® with Electrical Height Adjustment

- Touch control adjusts height from 32 inches (81cm) minimum to 38 inches (97cm) maximum.
- Locking top rotates manually 180° from stop to stop.



Model DEM with optional perforated body supports (Model SR2711-18S) and sliding instrument/specimen tray (Model SR999)

MODEL DPEM - Deluxe Pedestal Autopsy Table with Vertical Adjustment and Integral Sink

- Touch control adjusts height electrically from 32 inches (81cm) to 38 inches (97cm).

MODEL DH - Hydro-Poise Autopsy Table

- All features of Model DEM with hydraulic foot pedal to adjust height from 32 inches (81cm) to 38 inches (97cm).

MODEL S - Standard Autopsy Table

- Basic model designed for use with overhead water facilities and standard drain.

MODEL DL - Autopsy and Dissecting Table Combination

- L-shape design combines a deluxe autopsy table and dissecting table.
- Additional cabinet space includes an instrument drawer as well as large storage access.

MODEL M - Mobile Autopsy Table

- Designed to transport cadavers with minimum handling to and from the morgue.
- 8" (20cm) casters; two with swivel locks and brakes to provide stationary surface for autopsy.

MODELS AR512 and AR511 Dissecting Sink and Mobile Table

- Sink has two work surfaces; left-hand area covered by a removable perforated dissecting tray located over a drain trough that features a spray flushing system.
- Overall dimensions (AR512 Sink): 96" W x 28" D x 46" H (244cm W x 71cm D x 117cm H) to top of splash back.
- Mobile table moves from refrigerator to sink and includes hand crank to adjust pitch to drain into sink. Swivel locks and brakes on two casters.
- Overall dimensions (AR511 Mobile Table): 84" L x 30.3" W x 35.5" H (213cm L x 77cm W x 90cm H).

Mobile Autopsy Tables

MODELS SR 1910-30/SR 1910-31 Wall-Mounted Dissecting Sinks

- Includes basic features of Jewett Dissecting Sinks in two easy-to-install wall-mounted designs for the Medical Examiner or Forensic Pathologist.
- Overall dimensions:

SR 1910-30
114" W x 28" D x 41.5" H
(45cm W x 11cm D x 16cm H).

SR 1910-31
84" W x 28" D x 41.5"
H (213cm W x 71cm D x 105cm H).

MODEL SR1520 - Mobile Table

- Designed for use with Model SR 1910 Wall-Mounted Dissecting Sink.
- Overall dimensions: 84" L x 30.3" W x 38.5" H (213cm L x 77cm W x 95cm H).

SR1520

MODEL SR1867 - Mobile Autopsy Table

- Height adjustment from 28" to 47" (711mm to 1194mm) to accommodate varying user heights and special procedure applications.
- Overall dimensions: 82" L x 31" W (208cm L x 79cm W).

SR1910 Wall-Mounted Sink
SR1867 Mobile Autopsy Table

MODEL AR425 - Dissecting Sink

- Designed as an ideal companion to any Jewett autopsy table or mobile cart system.
- Overall dimensions: 86" W x 28" D x 48" H (66cm W x 71cm D x 122cm H).

Anatomy Equipment

MODELS SR1211/SR1386
Dissecting Tables

- Designed for use by medical students.
- Available with flanged feet or casters for mobile applications.
- Seamless welded stainless steel construction with large radius corners/edges for strength and sanitary appearance.
- Feature one-piece trays plus removable perforated grid.
- Adjustable stirrups and book holders.

SR1211
Open View

MODEL SR1211-3
Body Storage Rack

- Large-capacity cadaver storage rack system for university anatomy departments.
- Cadaver remains on same tray from initial receipt until disposition.
- Modular rack allows for expansion to any number of bays or tiers.

MODEL SR1468
Cadaver Tray Power-Lifter

- Lifts cadaver trays to desired height 9" to 90" (229 to 2286 mm) to and from SR1211-3 storage racks and SR1211-2 transport cart.
- 1,500 lbs. (680 kgs.) capacity; powered by two 6-volt rechargeable batteries.
- Four roller bearing polyurethane wheels.

SR1211-2

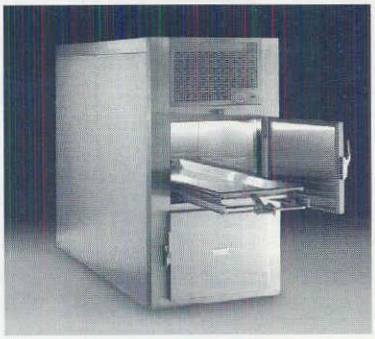
MODEL SR1211-2
4-Tier Transport Cart

- Moves tray in or out of rack on ball bearing rollers directly or via cadaver tray lifter.

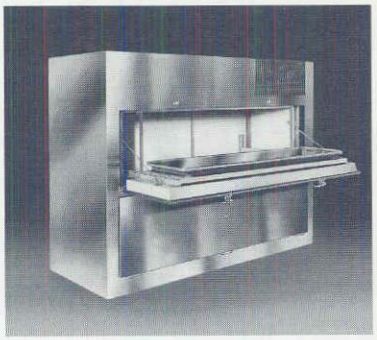
Morgue Refrigerators

End-Operating, Roll-In and Side-Opening Models

- Provide reliable, sanitary cold storage.
- Variety of end-operating and combination roll-in models or space-saving, side-opening models available.
- Stainless steel exterior fronts and .032 stucco embossed aluminum interior/exterior finishes standard. Other finishes available.
- Can be installed as free-standing units or built-in.
- Compressor can be self-contained or remote depending upon installation requirements. Air-cooled standard; water cooled available.



2EC End Opening



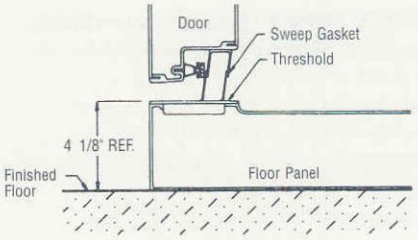
2SC Side Opening

4-SPEC 2W Roll-In

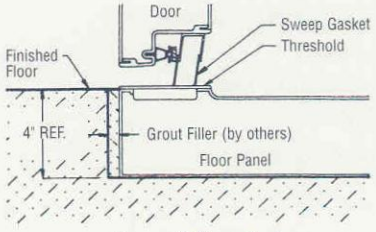
Walk-In Morgue Refrigerators

- Built to virtually any shape or size combining the features of a custom installation with the economies of pre-fabricated units.
- Ceiling-mounted, sidewall-mounted, pre-charged lines, pre-assembled remote and remote refrigeration systems available.
- All panels are insulated with 4" foamed-in-place polyurethane and tested to comply with building codes and national standards.
- Galvalume, aluminum, pre-painted white steel, stainless steel, galvannealed steel and other metal finishes available.
- Multiple design options, expert sales engineers, nationwide installation network and numerous standard and optional features available to enhance usage and performance.
- Can be installed on existing floor or with ramp for elevation or in shallow depression *(see diagrams at right).*

Modular Walk-In Refrigerator



Standard With Floor Cooler



Recessed Floor Cooler

Modular Nourishment Stations (Series NSM)

- Can be located virtually anywhere in the facility to provide a fast and efficient way to meet special dietary needs of patients.
- Modular design allows unmatched flexibility in the selection of equipment and options.
- Constructed of corrosion-free, welded stainless steel.
- Optional sloping dust top and side finishing panels for free-standing installations.
- All models feature a Follett® Ice System, sink with swivel gooseneck spout, paper towel dispenser, illuminated counter and top, shelf above counter, duplex receptacle with GFI as standard equipment.

MODEL NSM3 - Three-Foot Width

- Floor-mounted ice station with sink, counter and basic construction features.
- Dimensions: 36" W x 83" H x 34" D (914mm W x 2108mm H x 864mm D).

MODEL NSM4 - Four-Foot Width

- Modular station with four-ft. width to accommodate options such as a microwave oven, Jewett Undercounter Refrigerator and to provide additional counter and storage space.
- Dimensions: 48" W x 83" H x 34" D (1219mm W x 2108mm H x 864mm D).

MODEL NSM6 - Six-Foot Width

- Modular station that provides additional working space plus area for options such as single or dual hot plates and a coffee maker.
- Dimensions: 72" W x 83" H x 34" D (1829mm W x 2108mm H x 864mm D).

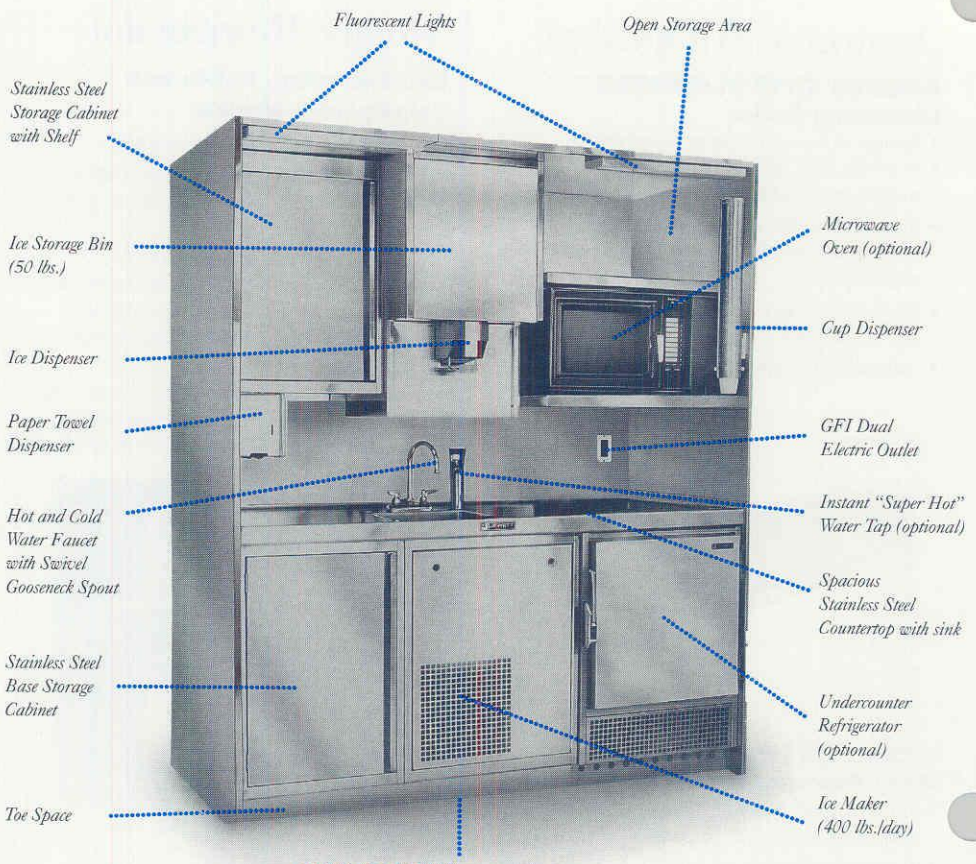
MODEL NSM7 - Seven-Foot Width

- Largest standard width and greatest selection of standard features.
- Can include both a Jewett Undercounter Refrigerator and Freezer. (Optional)
- Dimensions: 84" W x 83" H x 34" D (2134mm W x 2108mm H x 864mm D).

Electrical Data: 120 VAC, 60 Hz, Single Phase

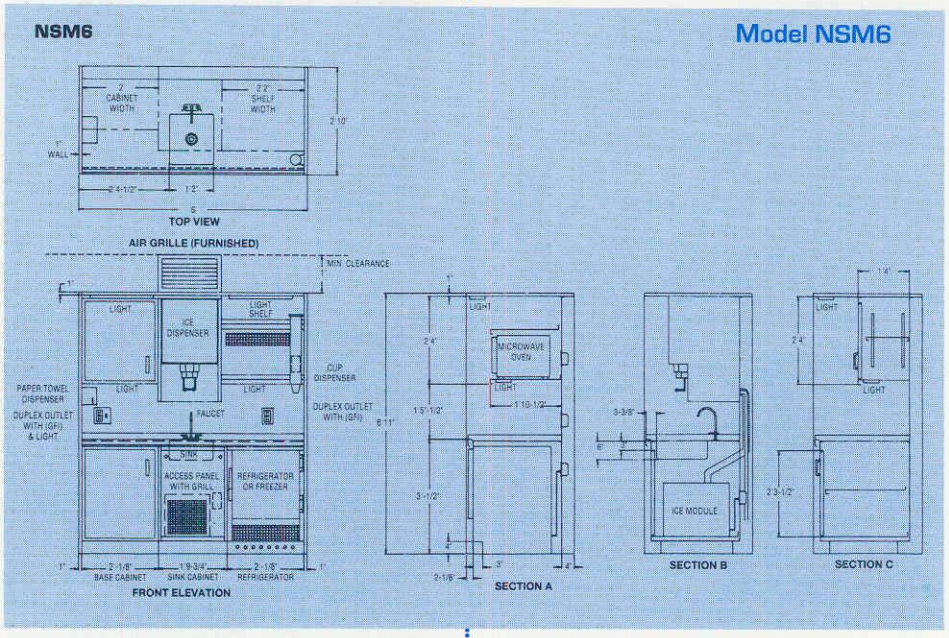
Options Available:

Microwave Oven
Instant Super-Hot Water Dispenser
Coffee Maker
Single or Dual Hot Plate
Sloping Dust Cover
Finished End Panels



Model NSM6 Six-Foot Width

NSF

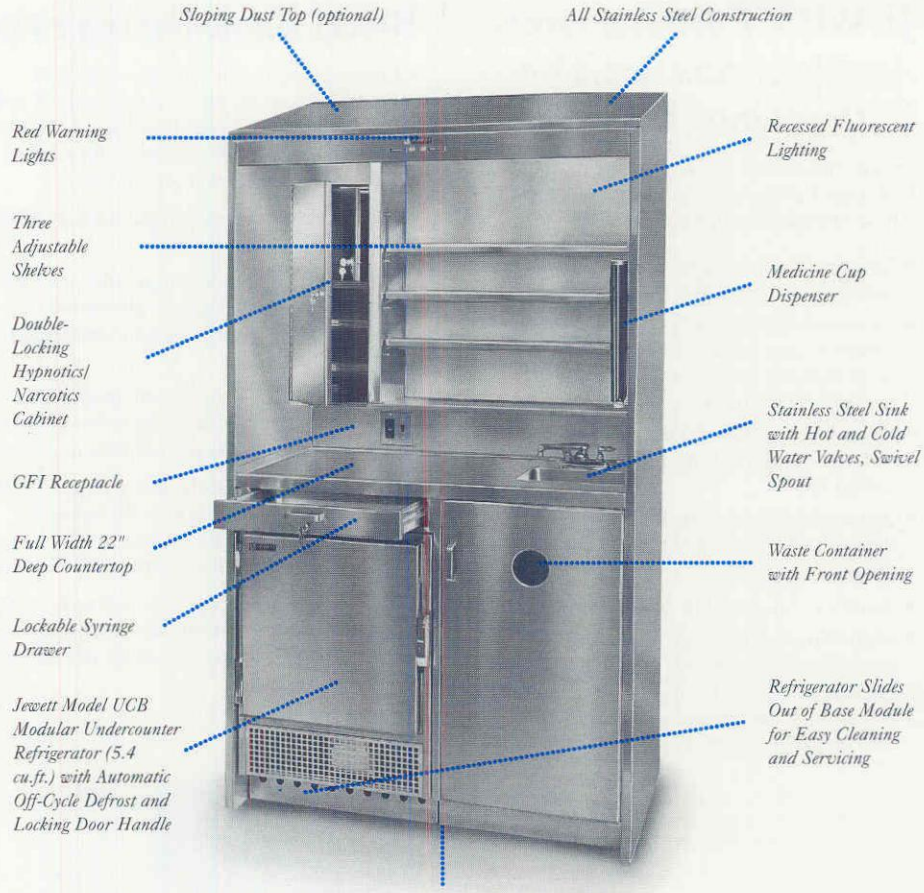


Medicine Stations (Series JMS)

- Available in four-ft., five-ft., and six-ft. width models to provide safe, secure and efficient storage and handling of medications.
- Constructed of corrosion-free, welded stainless steel.
- Dimensions:

JMS4: 48" W x 26" D x 80" H
(122cm W x 66cm D x 203cm H)
JMS5: 60" W x 26" D x 80" H
(152cm W x 66cm D x 203cm H)
JMS6:72" W x 26" D x 80" H
(183cm W x 66cm D x 203cm H)

Electrical Data: 120 VAC, 60 Hz, Single Phase



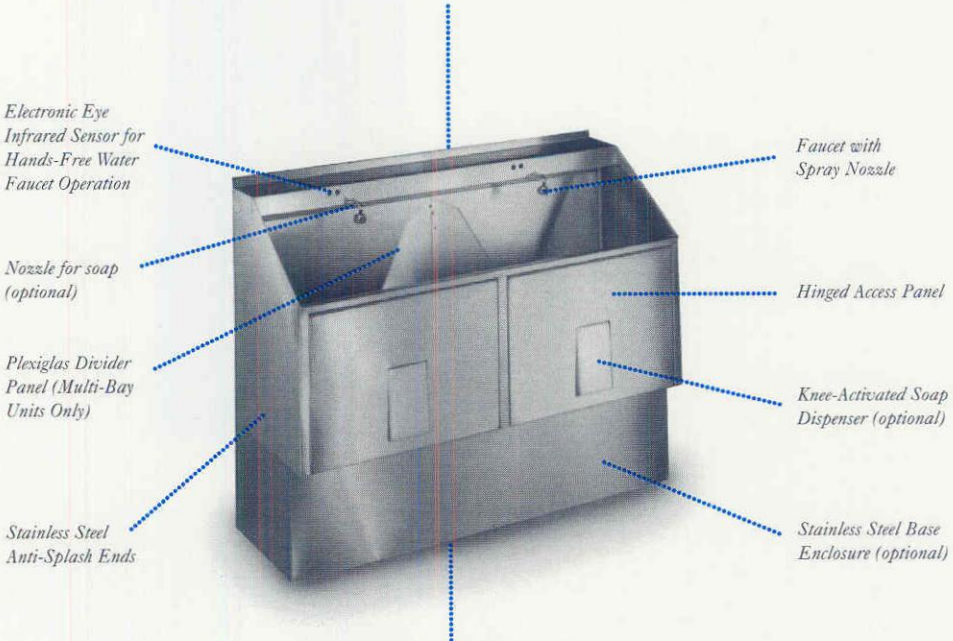
Model NSM4 Four-Foot Width

Surgical Scrub Sinks (Series SSS)

- Available in single, double and triple-bay stations to help assure proper aseptic scrubbing technique in the O.R., I.C.U., E.R., C.C.U., etc.
- Constructed of corrosion-free, welded stainless steel.
- Dimensions:

SSS1C Single-Bay:
31" W x 25" D x 35.5" H
(79cm W x 64cm D x 90cm H).
SSS2C Double-Bay:
63" W x 25" D x 35.5" H
(160cm W x 64cm D x 90cm H).
SSS3C Triple-Bay:
94" W x 25" D x 35.5" H
(239cm W x 64cm D x 90cm H).

Electrical Data: 120 VAC, 60 Hz, Single Phase



Model SSS2C Double-Bay
All stainless steel construction.

JEWETT Refrigerators And Freezers Set The Performance Standard

Jewett Blood Bank and Laboratory and Biological Refrigerators and Freezers Provide These Outstanding Performance Features:

- Uniform operating temperatures for safe, reliable cold storage.
- Hermetically sealed, environmentally efficient air-cooled refrigeration system with internal blower coils for precise temperature quality.
- CFC-free, vapor-sealed polyurethane cabinet insulation, packaging, and refrigerant.
- Adjustable, interchangeable stainless steel drawers and/or wire shelves.
- Heavy-duty casters.
- Built to U.L. and CE Mark standards.
- Optional pass-through designs, walk-in rooms and refrigerated labeling stations for high-volume, high-inventory turnover areas. Custom engineering services are also available. Contact Jewett for details.

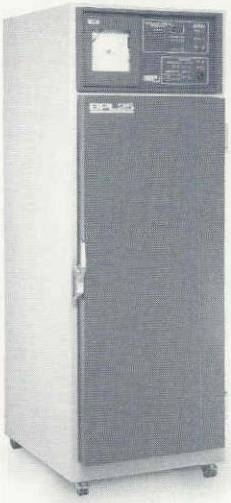
Blood Bank Refrigerators

- Designed and built to meet or exceed American Association of Blood Bank (AABB) and American National Red Cross (ANRC) standards and 510k clearance, for reliable cold storage of blood components.
- Solid state electronic temperature controller pre-set for +3°C operation.
- Seven-day electronic temperature recorder and digital microprocessor alarm/monitor with diagnostic test functions standard on most models.
- Complete line of single and double-door models to meet a wide range of blood storage requirements and space utilization needs.
- Four upright models feature galvannealed steel interior and exterior with textured enamel exterior finish (beige) and white enamel interior finish. Stainless steel optional.
- One undercounter model (with removable top) and one wall-mounted model feature stainless steel construction to meet a variety of clinical needs.

BBR25 24.8 cu.ft. Capacity Upright Blood Bank Refrigerator

Blood Plasma Freezers

- Four basic models, all featuring solid state electronic controls, available with unit capacities from 88 to 1120 packs.
- Upright models maintain -30°C uniform operating temperature and feature heavy gauge galvannealed steel interior and exterior, textured beige enamel exterior, and white enamel interior; optional stainless steel available.
- Undercounter model (with removable top) maintains -30°C; has three roll-out stainless steel drawers plus stainless steel interior and exterior construction.



BPL25 24.8 cu.ft. Capacity -30°C Blood Plasma Freezer

BPL55 Extra Large 55.0 cu.ft. Capacity Blood Plasma Freezer

Laboratory and Biological Refrigerators and Freezers

General-Purpose Laboratory Refrigerators

- Ideal for a wide range of life science, clinical and industrial applications.
- Four upright models (capacities from 16.9 to 55 cu. ft.) feature galvannealed steel interior and exterior with textured beige enamel exterior finish and white enamel interior finish. Stainless steel optional.
- Triple-pane heated glass door and frame reduces condensation.
- Adjustable wire shelves.
- 5.4 cu. ft. capacity undercounter available in standard and pass-through designs.

LR25
24.8 cu.ft. Capacity
Upright Laboratory
Refrigerator

Pharmacy and Biological Refrigerators

- Ideal for biotechnical and pharmaceutical cold storage applications.
- Four upright models (capacities from 16.9 to 55 cu. ft.) with galvannealed steel interior and exterior. Stainless steel optional.
- Triple-pane heated glass door and frame reduces condensation.
- Adjustable stainless steel drawers and painted wire shelves.

Chromatography Refrigerators

- Ideal for gel permeation for cancer and DNA separations as well as for reverse-phase chromatography.
- Two upright models (capacities of 24.8 and 55 cu. ft.).
- Two vapor-proof covered access portholes.
- Interior multiple-outlet power receptacles with external switches for interior lights and power.

Flammable Material Storage Refrigerators and Freezers (FMS)

- Features coldwall cooling system to provide an interior safe from explosion due to sparking of stainless interior finishes and fixtures.
- Three upright models (capacities from 16.9 to 55 cu. ft.), one undercounter model (5.4 cu. ft.) and five wall-mounted models (1.5 and 3.2 cu. ft.) including two pass-through designs and one freezer.

UC5C 5.4 cu.ft. Capacity, Undercounter
Flammable Material Storage Refrigerator

Explosion-Proof Refrigerators

- All controls and wiring fully sealed outside cabinet in U.L. listed conduit or cast aluminum housing.
- Two upright refrigerators (capacities 11.8 and 21.0 cu. ft.) and one undercounter refrigerator (4.9 cu. ft.) available.
- Built to meet all specifications of U.L. and the National Fire Underwriters Code.
- Stainless steel interior finish.

Dual-Temp Lab/Bio Refrigerators/Freezers

- Convenience of two separate cooling compartments in choice of two space-saving units (11.0 and 30.5 cu. ft. capacity refrigerators; 4.7 cu. ft. freezer for each).
- White enamel interior standard.
- Features adjustable stainless steel drawers and painted wire shelves.

Laboratory Freezers

- Four upright models (capacities from 16.9 to 55.0 cu. ft.), two 4.6 cu. ft. capacity undercounter models (including FMS unit) and one 3.2 cu. ft. capacity wall-mounted model. Undercounter and wall-mounted models feature stainless steel interior construction.

Super Cold™ -85°C Ultra-Low Temperature Freezers

- Provides stable operating temperature to -85°C to meet a wide range of clinical, industrial and biotechnical applications.
- Four chest models (3.1 to 20.5 cu. ft. capacities); three upright models (13.4 to 20.2 cu. ft.) and one upright Red Cell Freezer model available.
- Exclusive down-feed evaporator and automatic scrubbing cycle for maximum refrigerant flow.
- Red Cell Freezer is built to AABB and ANRC standards; holds 200 red cell canisters and features solid state touch-pad alarm test functions and temperature recorder.

-85°C Upright and Chest Type Freezers

Polarstar® Economy Refrigerators

- Dependable, energy-efficient cold storage at an economy price for labs, nursing stations and general utility use.
- Three compact models; two upright, reach-in refrigerator/freezer models; one upright reach-in freezer.
- C65M compact refrigerator/freezer features automatic timed hot gas defrost.
- JSR43 upright refrigerator features 43 cu.ft. storage capacity and two sliding glass doors for use in tight spaces.

C65M
Undercounter
Refrigerator-Freezer
Combination

PEOPLE DEDICATED TO PRODUCT QUALITY AND CUSTOMER SATISFACTION

PLANNING AND DESIGN SERVICES

Jewett's design and engineering staff is ready to help you select the proper equipment for your new construction or renovation project. Jewett's team can provide complete plans, layouts and product recommendations and will work to ensure that every piece of equipment meets the specific need. All Jewett equipment is easy to install, usually requiring only simple plumbing and electrical hook-up, and is designed to provide years of dependable performance and economical operation.

EXCLUSIVE 5•2•1 WARRANTY

Jewett offers the most comprehensive product warranty of any refrigerator manufacturer. Our exclusive 5•2•1 Warranty provides five-year coverage of the refrigeration compressor, two-year replacement parts coverage and one-year free labor on any Jewett refrigerator or freezer (except POLARSTAR models) sold for use in the 48 contiguous United States. For products sold outside this area and for international sales as well as POLARSTAR models, our one-year warranty on parts only applies.

TOLL-FREE DIRECT LINK SERVICE

When you need immediate answers and additional information, help is only a toll-free phone call away with Jewett's Direct Link Service. Whatever you require — literature, price quotations, architectural-engineering renderings, seismic restraint data, complete specifications or installation data — just call 1-800-879-7767 and our Direct Link Sales and Service Team is ready to assist you.

FOR MORE INFORMATION:

CALL: 800-879-7767 or 716-881-0030

FAX: 716-881-6092

Internet: www.jewettinc.com

JEWETT

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